FEEDSTUFFS

The Weekly Newspaper for the Feed Industry

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Millfeed, Animal Proteins Spark Ingredient Market

The Cinderella ingredients in this week's feedstuffs market—which was mixed, to say the least, but still of a stronger nature than in many weeks past—were wheat millfeeds, meat and bone meal, tankage, soybean oil meal and some oat products. They were the ones that showed some strength in an otherwise draggy market.

Their strength, however, was about overshadowed by further weaknesses in many other ingredients. The U.S. Department of Agriculture reported that the index of weighted prices for major feedstuffs, averaged nationally, gained .2 from Feb. 23 to March 1.

Except for the soybean item, all other oilseed meals continued their

(Turn to INGREDIENTS, page 89)

New Turkey Program In Carolinas Offers Growers 'Floor Price'

By Special Correspondent

MONROE, N.C.—Turkey growers in the Carolinas are being offered a new program in which a national meat processing firm provides a market and a guaranteed floor price for the birds and a feed manufacturer provides feed and feeding, financing and management assistance.

The feed company providing the feed and management assistance is Red Comb-Pioneer Mills, Inc., Chicago. Identity of the national meat processing firm involved was not announced.

Red Comb officials said the company's mixer-dealers in the Carolinas play a part in the program in that they mix the feeds, using local or other available grains, and provide the feed delivery, husbandry and management services to the producer.

The goal of the program was said to be "a uniform quality turkey put on the market in a steady volume." The grower will be paid "the actual market price, or the floor price, whichever is higher."

It was indicated that the processor

(Turn to TURKEY PLAN, page 8)

Warns Against Too Many Turkeys

WASHINGTON—Farmers could be headed for another record crop of turkeys in 1960 which could have an adverse effect on prices later in the year, Ezra Taft Benson, secretary of agriculture, warned this week.

The secretary based his warning upon a report which indicated that producers intend to raise 6% more turkeys than in 1959 (Feedstuffs, Jan. 30). He noted that the number of breeder hens on farms is adequate to supply the eggs to produce a turkey crop of the size indicated by producers' intentions.

Prices to farmers for turkeys rose sharply in the last two months of 1959 and remained well above a year earlier in February. Prices are likely to continue firm until late summer since storage holdings on Feb. 1 were 11% smaller than a year earlier and marketings of live turkeys will be seasonally light for several months.

Heavy-breed poults hatched since Sept. 1, 1959, which will be marketed in 1960, numbered 30% more than a year ago. Even though light-breed hatches have recently been below the year before, the importance of the heavy-breed crop suggests the need for curbing the upward tendency in the hatch.

The secretary warned producers not to expect prices in the last half of the year to hold at recent levels if production increases markedly. He stressed the fact that an increase in output of the size indicated by producers' intentions could result in a surplus of turkeys and reduced prices next fall.

Secretary Benson pointed out that adjustments can still be made. He suggested that producers carefully review their production plans for 1960 and give considerable thought to the prospective demand for turkeys at market time.

FEEDSTUFFS *Features This Week*

PELLETING—Pelleting suggestions as outlined at the Pacific Northwest Feed Mill Production School appear on **page 10.**

PELLETED RATIONS—Data on feeding results and the economics of feeding pelleted rations to beef cattle are presented on **page 18.**

PILOT FEEDING PENS—A New Mexico feed firm operates pilot feeding pens and says this helps gain customers. **Page 26.**

VITAMIN A—A paper on a proposed vitamin A reference standard will be found on **page 38.**

INDUSTRY TRENDS—An industry leader's analysis of the problem of fitting into changed agricultural production patterns appears on **page 54.**

— REGULAR FEATURES —

Convention Calendar	20	Joe Brooks	74
Putting Research to Work	44	Feed Control Comment	80
Worth Looking Into	66	Classified Ads	86
Feedstuffs Index	70	Feed Markets in Detail	90

Southeastern Storm Kills Birds, Halts Movement of Feed

ATLANTA — Southeastern broiler growers suffered serious losses this week when their region was struck by the most damaging ice, sleet and snow storm in 24 years.

Damage was reported to be mounting into millions of dollars. From one county in north Georgia came reports of many chickens being killed when approximately 70 houses were blown down in the storm.

The most serious problem which confronted growers, however, was getting feed delivered to their farms. The U.S. Department of Agriculture requested declaration of disaster areas and asked that local army reserve units use their personnel and

(Turn to STORM, page 8)

Spring Farrowing Upsurge Indicated

GRUNDY CENTER, IOWA — A survey of 445 farmers in 10 states by the National Hog Farmer since the December pig crop estimate of a 12% reduction in spring farrowings has indicated an upward revision in plans by farmers.

Major points revealed by the survey were a large upturn in intended farrowings in the spring quarter in the west north central area and a jump in feeder pig demand. The survey revealed that feeder pig prices shot up $2-$3 per head and more.

However, the survey also indicated caution on the part of what might be called the "steady producers" to alter their 1960 spring intentions. Many

(Turn to FARROWING, page 89)

Ralston Purina Buys One-Half Interest in French Feed Company

ST. LOUIS — The Ralston Purina Co., St. Louis, has purchased one-half interest in the Duquesne Co. of France, it has been announced jointly by the presidents of the two companies, Raymond E. Rowland of Ralston Purina and Jean Duquesne of Duquesne.

The stock transaction brings together in the joint venture the oldest and largest feed manufacturer of France and the largest of the U.S.

The transaction was approved by Purina's board of directors Jan. 4, 1960, and is retroactive to Jan. 1, 1960. The new corporate name of the French firm will be Duquesne-Purina. Jean Duquesne will continue as president. N. K. Stevens of Purina's international division will be executive vice president.

Robert Gamelin, a divisional sales manager in Purina's Canadian subsidiary, will become vice president and general sales manager.

The Duquesne firm was founded by the Duquesne family in 1883. It has two feed mills in France, with the home office and largest plant at

(Turn to PURINA, page 8)

Dannen Mills Forms Feeding Department

ST. JOSEPH, MO.—The formation of a new "feeding department" by Dannen Mills, Inc., was announced this week by Robert Waite, Jr., vice president of the company's feed division.

Duane Putnam, as the new department's manager, will be in charge of Dannen livestock feeding operations at Yale, Okla., at Milliken, Colo., and at Timber Ridge Farm, St. Joseph.

A company spokesman said the feeding department was still in "the formative stage," and he declined to comment further on details of the operation.

Mr. Putnam, who has had feeding experience with the Crowfoot Cattle Co., Strong City, Kansas, and the J. S. Abercrombie Co., Gonzales, Texas, is a graduate of Kansas State University. His latest position before joining Dannen was with the CGF Grain Co., Atchison, Kansas.

'Feed Men Determined to Keep Pace'

By ROGER BERGLUND
Feedstuffs Managing Editor

ROANOKE, VA.—A determination on the part of the feed industry to go forward—to adjust to changes, to institute new or sounder practices, to recognize basic important principles—was reflected in economic-type discussions at the annual Virginia Feed Convention and Nutrition Conference.

In addition to nutrition reports (a story on these will appear next week), the conference included talks by industry and college specialists on several topics of interest to management personnel in the feed-poultry-livestock industry in the Virginia area and elsewhere. The meeting was held Feb. 23-24 at the Hotel Roanoke under the sponsorship of the Virginia State Feed Assn. and Virginia Polytechnic Institute.

Some of the points made by speakers were these:

● There will be closer relationships between agricultural production and marketing, but the basic job of the feed industry is to produce and distribute feed as efficiently as possible. Those who do a good job of this likely will continue in business.

● Virginia research indicated total cost per pound of broiler decreased as birds were grown up to at least 10 weeks, and profit per square foot of floor space per year increased as fewer lots were grown to heavier weights.

● Reducing the slaughter weight of pigs appears to be a "very real way" to increase the ratio of lean meat and improve production efficiency.

● If feed men are to be egg handlers for producers, they must help see that production costs are held down, must stop creating their own price problems in eastern markets, must stop subsidizing egg prices in order to buy feed business, and must stop pricing unrealistically.

● Virginia could eventually become the heart of the hog belt if proper programs are put into practice. Unless programs are improved and pro-

(Turn to FEED MEN, page 92)

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The Great Debate

WHILE POLITICAL DEBATE rages across the land over a great variety of proposed "farm programs," there is not much possibility that any drastic departures from present price support legislation will be voted in Congress this year. Most of the talk, the investigations, the blame-calling will result in little action and do no more than build up a mountainous surplus of words that will topple over from its own weight into the Valley of Vindictive Verbiage about the time the election results are posted. Here most of this election material will be stored until it is time for the politicians to salvage the well-worn stones and build another mountain.

While much that is being spoken and written these days on the problems of agriculture is readily recognized as mostly political tub-thumping, it is well to keep in mind that serious thought on the subject continues among those who are specialists in farm economics. Ultimately the answers must come from those who know the subject best, and although action by legislators usually is tempered by political expediency, advice of experts must figure prominently in basic plans and concepts.

THERE IS CONCERN these days among economists who subscribe to the supply-demand theories of price adjustment because many of the younger, "liberal" economists are urging stronger controls as a solution to farm price problems. Some of these tight control proponents have come to the conclusion that a free agricultural market simply cannot be counted on to gear supply to demand at reasonable prices to producers. They believe that without production planning for the entire agricultural industry there is no way to avoid chronic oversupply problems.

It is suggested by some that each farmer should be told how much he can market so that he can adjust production efforts to get the most efficient output. This proposal, suggested as a substitute for acreage controls, certainly would plug up the obvious weaknesses in the present type of controls, but it would impose a type of regimentation that could do nothing but strangle initiative and efficiency. And the massive administrative job of running such a program would make the costs of present price support efforts look minute. How many millions of man hours would it take to set the national quota for each commodity? To police compliance? Who would referee the decisions as to whether one food product should be allowed to compete for consumer favor against another product?

The questions about such suggestions could be endless. The answers most certainly would be rejected by anyone willing to think through the implications of such straitjacket approaches. Yet these ideas are being given serious study and backing by men whose business it is to understand agricultural problems and propose solutions.

Agriculture and the industries which serve it must be prepared to resist such ideas during the campaign for votes and, more importantly, throughout the more subtle campaigns for acceptance of ideas endorsing political control of the economy.

Top of the Hopper

THE APPARENT LEVELING-OFF in formula feed tonnage during 1959, as indicated by the estimate of tonnage approximately equal to 1958 made by the American Feed Manufacturers Assn., is open to question, according to some industry observers.

It is pointed out that tonnage figures, as presently determined, do not take into account the rapid development of concentrate feed sales. One major feed company estimates that its substantial tonnage of concentrates, if projected to formula feed (which it is when it is fed), would show a

(Turn to TOP OF THE HOPPER, page 89)

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Though formula feed business didn't appear to be any better this week than last, there were indications that improvement may be on the way. Feed ingredient prices averaged out a trifle stronger, but this strength was primarily because of tighter supplies rather than better feed demand. On March 2 livestock prices advanced at Chicago to the highest levels since summer. The government's increased buying of dried eggs and heavier demand to cover needs for the Lenten season put more support under egg prices. The hog-corn ratio, based on Chicago prices, crept higher to 12.6 this week, compared with 12.1 the week before and 13 a year earlier. The index of wholesale feedstuff prices advanced .2 point to 78.1, but the new level was still under the 88.3 mark of a year earlier. The feed-grain index moved .7 point upward with higher corn and oats prices to 64, which was just .9 under the year-ago level. (Feed markets in detail on pages 90-92.)

Northwest

Like the private standing in the mess hall line, formula feed manufacturers in this area believe they're going to get where they want to go but they're not sure how long it's going to take.

Progress in the feed business in this region is perhaps even a bit slower than the hungry soldier's, but manufacturers are confident that the time will come when demand will be great enough so they can "sit down and eat."

This week, most manufacturers were producing roughly 10% less feed than during the same period a year ago. And this situation is expected to hang around for another week or so. Perhaps by then, increases in poultry flocks and swine herds will help move things along. Better prices for livestock would help, too.

Along about now is when the spring demand stimulation comes along, and manufacturers are hoping they won't be disappointed. High moisture corn remains a threat to this hope.

Ingredients, as a whole, were a bit stronger this week, but the gain was not expected to be enough to result in much of a formula feed price adjustment. The most noticeable price advances were made by millfeeds and animal protein feeds.

Northeast

Formula feeds started out this month in the same trough of depressed demand that characterized the market during February. And little or no improvement is expected next week.

One trade spokesman said consumers are either buying grain or they have some left on the farm to mix with concentrates.

It has been said that formula feeds have lagged this year because farmers have been feeding wet corn to their cattle and poultry. But some of the decline in this region can be attributed to a loss of markets to other states. And there is nothing in sight to replace the lost demand.

The recent cold wave may have led to a little more feeding of livestock and poultry to maintain body weight and temperature but it didn't show up too much in formula feed tonnage.

Dairy feeds to mix on the farm continued to account for the bulk of sales turnover, followed in order by egg mashes, broiler feeds and starter feeds.

Egg prices remained depressed. But broilers did fairly well and rose 1¢ lb. from a week ago. Milk held steady.

Running time of formula feed manufacturers averaged out last week at 36 hours, with some mills up to 40 hours and some down to 32 hours.

Southeast

On the whole, formula feed business showed signs of improvement this week. The broiler market continues on the favorable side, with prices holding around 18@19¢ lb. at the farm.

Corn prices advanced 3¢ bu. No northern trucked corn was able to come into the territory to sell under the Chattanooga prices because of an ice, sleet and snow storm.

Fairly good buying interest caused cottonseed oil meal to advance $1 ton and soybean oil meal to advance $1 ton. Some citrus processors advanced their prices to $35 ton, f.o.b. Florida producing points.

Central States

The final week of February seems to have brought about a moderate improvement in the demand for the product of commercial mixed feed manufacturers. While it was anything but a broad-scale betterment, it was improved enough over the two weeks just preceding to have wiped out at least some of the impact of the draggy demand of the first three weeks of the month.

The extent to which the stormy, cold weather during the closing week of February may have stirred up the latent demand is not known, of course, but undoubtedly it does deserve some of the credit.

The improvement, while present, has not been of sufficient size to bring about any general increase in running time. Since late last fall, there has been little or nothing in the way of a back-log of orders in the hands of the mixers and there is nothing in the very immediate picture which would indicate a change in that respect, at least until the seasonal demand for poultry feeds makes its presence felt.

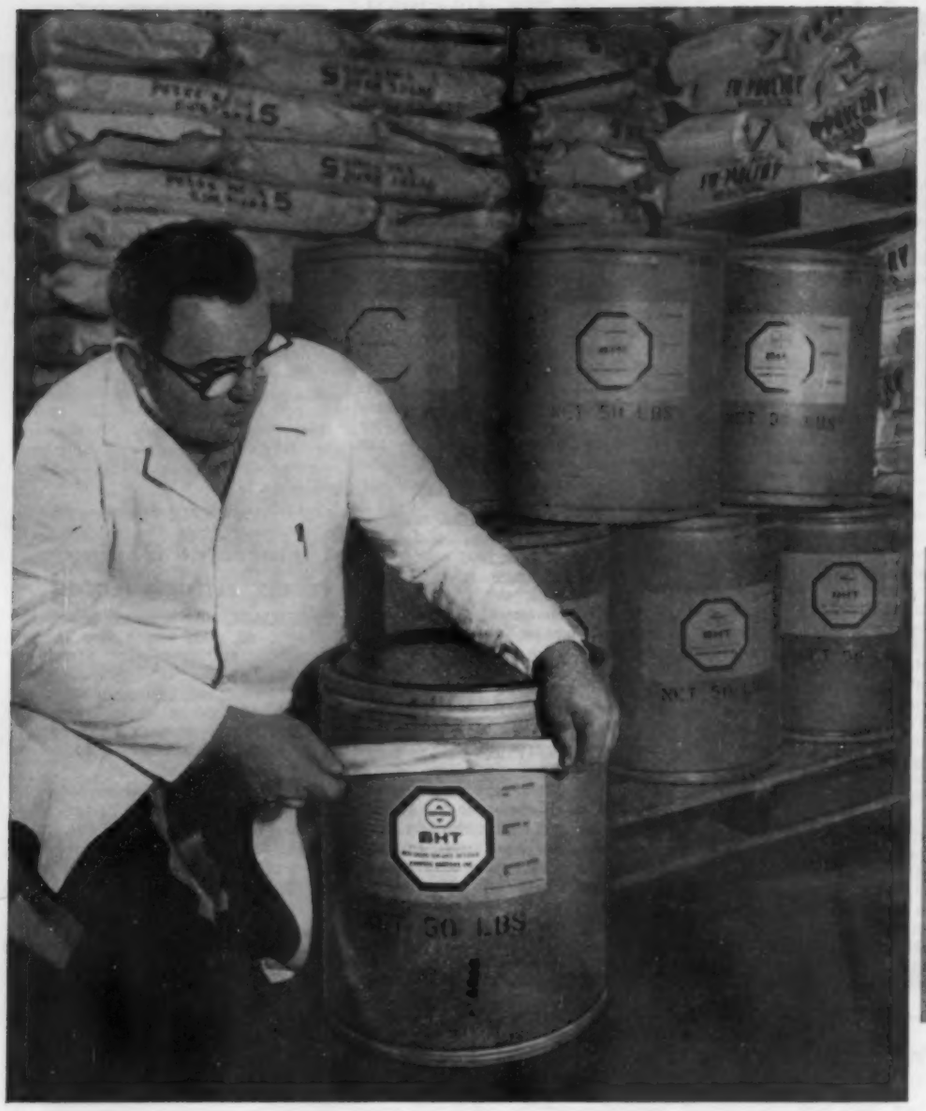
Hog prices have been trending upward with a top of $15.25 cwt. at Chicago this week. Continuation of this trend could very well be reflected in improved call for hog feeds before too long.

Ohio Valley

While the central Ohio Valley experienced only 1-5 in. of snowfall during the past week, up-river areas in Ohio, West Virginia and Pennsylvania were so heavily blanketed that many business activities, including those of feed manufacturers were slowed to a virtual halt—as were truck deliveries to scores of farming communities. Added to the woes of manufacturers and retailers alike is the coldest weather of this winter season. Sub-zero temperatures have been reported in many places.

As a result, the only cheerful note sounded by one manufacturer was this observation: "We certainly had to wait a long time for winter cold

(Turn to MARKETS, page 95)



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Monthly and Annual Trends Crisscross In Farm Commodity-Feed Price Ratios

WASHINGTON—The U.S. Department of Agriculture's report on agricultural prices as of Feb. 15 demonstrates that month-to-month trends in farm commodity-feed price ratios aren't the same as year-to-year changes in these ratios.

Most of the farm commodity-feed price ratios which showed improvement in February of this year over January were lower in February, 1960, than in February, 1959. And, most of the ratios which dropped from January to February were in a better position Feb. 15, 1960, than Feb. 15, 1959.

There were exceptions to this crisscross generalization. For instance, the broiler-feed ratio was higher Feb. 15 than Jan. 15, and the February, 1960, ratio was a bit better than the February, 1959, ratio. The number of pounds of poultry feed equal in value to 1 doz. eggs dropped from January to February, and this relationship was less favorable to the producer Feb. 15, 1960, than it was Feb. 15, 1959.

Feed: Average Prices Paid by Farmers, U.S., Feb. 15, 1960, With Comparisons

Commodity and unit	Feb. 15, 1959	Jan. 15, 1960	Feb. 15, 1960
	——dollars——		
Alfalfa hay, baled, ton..	30.3	32.2	32.5
Other hay, baled, ton ..	28.2	28.7	28.8
Cottonseed meal, 41%, cwt.	4.36	4.14	4.09
Soybean meal, 44%, cwt.	4.39	4.24	4.19
Bran, cwt.	3.10	2.90	2.88
Middlings, cwt.	3.15	2.96	2.94
Corn meal, cwt.	3.15	3.09	3.10
Scratch grain, cwt.	3.89	3.85	3.85
Laying mash, cwt.	4.52	4.36	4.36
Poultry ration cost, cwt..	3.41	3.33	3.34
Broiler growing mash, cwt.	4.94	4.69	4.70
Turkey growing mash, cwt.	4.92	4.69	4.68
Chick starter mash, cwt.	5.02	4.84	4.84
Mixed dairy feed, under 29% protein, cwt.	3.81	3.73	3.72
Mixed dairy feed, 29% and over	4.64	4.52	4.49
Mixed hog feed, 14-18%, cwt.	4.16	4.03	4.03
Mixed hog feed, over 29%, cwt.	5.61	5.30	5.30
Cattle feed, 30% and over	4.49	4.36	4.36
	—Index numbers— (1910-14=100)		
Feed, prices paid by farmers	202	197	197

Among the factors primarily responsible for the increase in the index of prices received by farmers from Jan. 15 to Feb. 15 were higher prices for meat animals. Downgrading the bolstering effect of stronger meat animal prices were lower prices for dairy products, eggs, turkeys and other commodities.

USDA reports also that minor increases in prices for farm production goods, partly offset by slight decreases in prices of family living items, were not sufficient to change the index of prices paid by farmers. Farmers paid slightly higher prices for feed Feb. 15, 1960, than they did Feb. 15, 1959. The 1960 average for February was 202% of the 1910-14 average, while the February, 1959, level was 197% of the 1910-14 base period.

Unique Positions

Generally speaking, the relationship between feed cost and commercial broiler value is in a unique position. The broiler-feed ratio Feb. 15 was better than both a month earlier and a year earlier. The egg-feed ratio was set apart from that of other commodity-feed ratios, too, but in an unfavorable way. The ratio was lower Feb. 15 of this year than both a month earlier and a year earlier.

USDA reports that the index of prices received by farmers rose nearly 1% (2 points) to 233% of its 1910-14 average during the month ended Feb. 15. But, the mid-February level of this same index was about 4% below a year earlier.

The feeder and replacement livestock index rose nearly 1% from Jan. 15 to Feb. 15. Feeder lamb prices rose 9%, baby chick prices gained 4% and turkey poult prices moved upward by 3%. The mid-February feeder livestock index, at 363, was 4% below a year earlier.

POULTRY AND EGGS—The index of prices received by producers for poultry and eggs declined a little more than 1% to 142 in mid-February. USDA says the drop in prices for eggs and turkeys from Jan. 15 to Feb. 15 was only partially offset by higher chicken prices. Egg prices continued the seasonal decline that started in October, and in mid-February averaged 28.9¢ doz., the lowest for the month since 1942. Commercial broiler prices rose 3½% during the month to average 17.7¢ lb., the highest since July, 1958.

The Feb. 15 broiler-feed ratio, at 3.8, was .2 higher than on Jan. 15 and .3 better than a year earlier.

The mid-February turkey-feed ratio was off noticeably from a month earlier. The change was from 8.5 to 7.7. A year ago in February the ratio was 7.3.

February's egg-feed ratio of 8.7 was down .2 from January and down 1.8 from a year earlier. USDA lists the 1949-58 average at 11.1.

LIVESTOCK—Prices paid to farmers for meat animals averaged 3% higher in mid-February than a month earlier, with the index at 286% of its 1910-14 average. Calf, lamb and sheep prices were up also from January. However, average prices of all species except lambs were still well below a year earlier.

Mid-February's hog-corn ratio of 13.1 was a significant improvement over the mid-January ratio of 12.4, still under the 14.8 ratio of February, 1959.

DAIRY PRODUCTS—A seasonal decline in the index of prices by farmers for dairy products continued from Jan. 15 to Feb. 15. Prices for wholesale milk and for milkfat in cream were off, but retail milk prices held steady. At 260 in mid-February, the index was 2% lower than a month earlier.

USDA reports that the milk-feed ratio lost ground during the Jan. 15-Feb. 15 period. It dropped from 1.49 to 1.45, which was still better than the 1.42 recorded for Feb. 15, 1959.

The February butterfat-feed ratio of 24.7 was just .1 under the January ratio and still above the 23.7 figure recorded for February, 1959.

Farm Commodity-Feed Price Ratios

	U.S.	New Eng.	Mid-Atl.	East North Cent.	West North Cent.	South Atl.	East South Cent.	West South Cent.	Mount.	Pac.
CHICKEN-FEED—										
Farm Chickens:										
February, 1960	3.5	3.9	3.9	3.5	2.7	3.7	3.5	3.2	3.2	2.6
January, 1960	3.4	3.8	3.7	3.3	2.7	3.6	3.4	3.1	3.0	2.4
February, 1959	3.8	3.8	4.3	3.8	3.4	3.9	3.9	3.5	4.0	3.2
Average (1949-58)	5.5									
Average (Feb., 1949-58) ..	5.9									
Broilers:										
February, 1960	3.8	3.8	4.7	4.1	3.8	3.7	3.6	3.7	3.8	3.9
January, 1960	3.6	3.8	4.5	3.9	3.8	3.6	3.5	3.5	3.8	3.7
February, 1959	3.5	3.6	4.3	3.7	3.7	3.4	3.3	3.4	3.9	3.7
TURKEY-FEED—										
February, 1960	7.7	7.2	8.2	7.9	9.1	6.9	7.8	7.3	8.1	6.7
January, 1960	8.5	7.2	8.5	8.3	9.2	7.5	8.1	7.6	8.7	7.8
February, 1959	7.3	7.1	8.4	7.2	8.3	6.6	7.2	6.7	7.2	6.3
Average (1949-58)	8.4									
Average (Feb., 1949-58) ..	8.8									
EGG-FEED—										
February, 1960	8.7	11.2	9.2	7.8	7.6	9.9	10.5	9.4	9.6	8.8
January, 1960	8.9	10.8	9.4	7.8	7.4	10.4	11.5	10.3	10.1	9.2
February, 1959	10.5	9.9	10.9	10.1	10.0	11.0	11.5	10.7	10.3	9.9
Average (1949-58)	11.1									
Average (Feb., 1949-58) ..	10.5									

	U.S.	North Atl.	East North Cent.	West North Cent.	South Atl.	South Cent.	West
MILK-FEED—							
February, 1960	1.45	1.40	1.39	1.51	1.68	1.44	1.44
January, 1960	1.49	1.44	1.41	1.54	1.71	1.47	1.49
February, 1959	1.42	1.40	1.33	1.49	1.67	1.40	1.43
Average (1949-58)	1.30						
Average (Feb., 1949-58) ..	1.32						
BUTTERFAT-FEED—							
February, 1960	24.7	...	20.2	27.2	...	16.6	18.9
January, 1960	24.8	...	20.2	27.3	...	16.6	19.3
February, 1959	23.7	...	19.4	26.7	...	16.2	18.2
Average (1949-58)	22.2						
Average (Feb., 1949-58) ..	22.8						

	U.S.	North Cent.
HOG-CORN—		
February, 1960	13.1	13.6
January, 1960	12.4	12.8
February, 1959	14.8	15.2
Average (1949-58)	14.0	14.3
Average (Feb., 1949-58) ..	14.3	14.8

NOTE: Ratios computed at mid-month by U.S. Department of Agriculture. Ratios represent number of pounds of poultry feed equal in value to 1 lb. live farm chicken, turkey or 1 doz. eggs; pounds broiler growing mash equal to 1 lb. broiler; pounds concentrate rations equal to 1 lb. milk or butterfat; bushels of corn equal to 100 lb. hog. Increases in ratios are favorable to the feeder.

KEY TO GEOGRAPHICAL DIVISIONS

Here is a guide to the states included in the geographical divisions listed in the accompanying commodity-feed price ratios:

New England: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.

Mid-Atlantic: New York, New Jersey, Pennsylvania.

North Atlantic: New England and Mid-Atlantic states combined.

East North Central: Ohio, Indiana, Illinois, Michigan, Wisconsin.

West North Central: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas.

North Central: Combination of the two foregoing.

South Atlantic: Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida.

East South Central: Kentucky, Tennessee, Alabama, Mississippi.

West South Central: Arkansas, Louisiana, Oklahoma, Texas.

South Central: Combination of the two above.

Pacific: Washington, Oregon, California.

Mountain: Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Montana.

West: Combination of the two above.

Union-Egg Producer Meeting Postponed

ELIZABETH, N.J.—The meeting which James R. Hoffa, Teamsters Union president, and discouraged New Jersey egg producers had scheduled for March 3 in New Jersey has been postponed (Feedstuffs, Feb. 27). It was reported that the meeting will be held at a later date in Washington.

Mr. Hoffa plans to start a drive to organize egg producers who asked his help because they said "it costs 35¢ to produce a dozen eggs and our return is 6¢ less."

Mrs. Miriam Katz, representing the New Jersey producer group, said she wrote to Mr. Hoffa "in desperation," and chose to ask the Teamsters for help because "they're the strongest." She added: "They are the only ones left to help us. Everything else failed."

So far, according to Mr. Hoffa, the only agricultural workers officially allied with the Teamsters are dairy producers around Pittsburgh and Philadelphia.

A survey of 25 egg producers in the Lakewood, N.J., area, according to a news dispatch, turned up 15 who said they would definitely join the Teamsters. Only a few of the 25 flatly opposed joining, according to one report.

PROCEEDINGS OF MILL SCHOOL AVAILABLE

SEATTLE—Published proceedings of the recent Pacific Northwest Feed Mill Production School are available to feed men, it was announced this week by J. G. Wilson, manager of the Washington State Feed Assn. The association sponsored the school, held Feb. 10-11 in Yakima, Wash. Copies of the proceedings may be obtained at a price of $3 per copy by writing to the association, 814 Second Ave. Bldg., Seattle 4, Wash.

The production school covered all aspects of pelleting. The proceedings include texts of talks at the school, plus summaries of group discussions on such things as pellet mill operation, roughage pelleting, processing before and after pelleting and bulk storage and handling. (Also see story on page 10.)

Chances of Having Heart Attack Noted

CHICAGO—An apparently healthy, 45-year-old man has a one in five chance of getting a heart attack by age 65. Those in the "high risk" group—overweight, high blood pressure, high blood cholesterol, diabetes, kidney disease or with a family history of heart disease—the odds drop to one in two.

These disclosures were made by Dr. Jeremiah Stamler, head of the heart disease control program at the Board of Health in Chicago, at the monthly dinner meeting of the Chicago Feed Club here.

Observance of Heart Month during February, said Dr. Stamler, will bring many important statements from medical authorities which tend to cast part of the blame for heart disease on solid fats in the diet. Unsaturated fats, found chiefly in vegetable fats, such as corn oil, cotton seed oil and soybean oil are thought to be not harmful. Saturated fats, found chiefly in animal sources, like butter, cream, lard and fatty meats, and also in vegetable or synthetic fats that have been hydrogenated or "hardened," like shortening or oleomargarine, are said to be the villains.

Although the big question, "Will lowering of cholesterol in the blood prevent or stave off a heart attack?" still requires much study, many physicians now are willing to recommend substitution of unsaturated oil fats for animal fats, along with total reduction of fat intake, reported Dr. Stamler.

The meeting was presided over by Gerald A. Karstens, Feed Age, club president. The next meeting will be March 18 at the Illinois Athletic Club.

Recent new members of the club are: J. D. Sinclair, Barson Chemical Co.; Carl E. Swinehart, Feed Age; Robert M. Harrison, Feedstuffs; Robert S. Nellis, Nellis Feed Co.; Roger Bedier, Merle R. Pulver and John F. Hanrahan, Distillation Products Industries; William M. Wakeman, Thompson Farms Milling Co.; Adolph P. Johnson, Archer-Daniels-Midland Co., and G. V. Smith, Victor Chemical Works.

Heterochemical Corp. Names Distributor

CHARLOTTE, N.C.—Appointment of K. S. Crittendon, Inc., Charlotte, as exclusive distributor of Hetrogen K products in the North and South Carolina and Florida trade area has been announced by Heterochemical Corp., Valley Stream, N.Y.

K. S. Crittendon will provide feed manufacturers in this area with technical information on uses for vitamin K as well as delivery of the product from its Charlotte warehouse.

DYNAFOS®

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- **Ends the need to add unnecessary margins of safety**
- **Proves that all chemically processed phosphates are not alike**
- **Out-performs phosphates of low availability even under "practical" conditions**
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- **Provides proven high phosphate availability with low calcium content**
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Buying "second best" feed phosphates to cut formulation costs is false economy. Second best or low cost sources actually waste phosphorus because much of the phosphorus isn't available—can't be used by livestock or poultry.

This makes feeding inferior phosphates an expensive business, especially when compared with the readily available phosphorus provided by International's Dynamic DYNAFOS.

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31-59

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INTERNATIONAL MINERALS & CHEMICAL CORPORATION

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Sales Agents: **EASTERN AREA:** GRANDONE, INC., Needham (Mass.); SUNSET FEED & GRAIN CO., INC., Buffalo; P. R. MARKLEY, INC., Philadelphia; A. G. GREENE COMPANY, Charlotte (N. Carolina); EDWARD E. SMITH COMPANY, Atlanta; E. A. CARTER BROKERAGE COMPANY, Tampa. **CENTRAL AREA:** BULLARD FEED COMPANY, Chicago; GOOD LIFE CHEMICALS, INC., Effingham (Ill.); JOHN F. YOUNG COMPANY, Cincinnati; R. D. ERWIN COMPANY, Nashville; CHAS. F. WILLEN CO., INC., Birmingham (Ala.); STANDARD SALES COMPANY, Meridian (Miss.); The VITA PLUS CORPORATION, Madison, (Wis.). **MIDWEST AREA:** BLOMFIELD-SWANSON, Minneapolis; W. P. MANN SALES CO., Omaha; M. A. McCLELLAND COMPANY, Kansas City (Mo.); B. A. LUCIUS COMPANY, Fort Worth. **WEST COAST:** JAMES FARRELL & COMPANY, Seattle; JAMES FARRELL & COMPANY, Compton, (Calif.). **CANADA:** N. D. HOGG LTD., Toronto.

Pros, Cons of Feeding Practices Thoroughly Sifted at Colorado

By GEORGE E. BEVARD
Colorado State University

FT. COLLINS, COLO.—The pros and cons of using additives in dairy rations, of pelleting feeds for lambs and beef cattle, of nitrogen fertilization's effect on the nutritional value of forages, of conditioning hay and of trends in feedlot management were given a thorough going over at Colorado State University Feb. 22-25. Speaking to an audience of approximately 700 persons who attended the Livestock Days Program were agricultural research scientists and working stockmen.

For the first time in several years, snow and cold coincided with the annual event, cutting attendance by an estimated 500 persons.

DAIRY RATIONS—"There are no feed additives or feed processes that will boost milk production substantially," Dr. C. A. Lassiter, head of the Michigan State University dairy department, said. "The value of feeding antibiotics to mature dairy cattle still needs clarification."

He cited recent Michigan studies which he said showed Aureomycin-fed cows produced slightly more milk per day than those not receiving the antibiotic. At the same time, he suggested that in some cases the antibiotic may reduce some health problems.

Dr. Lassiter termed the use of tranquilizers in dairy rations as "still in the experimental stage" and saw no advantage in using them. "Sheep people tell me the same thing applies to lambs—there's no consistent response," he said.

The Michigan scientist warned that dairymen cannot apply developments from beef fattening studies to dairy cattle. "Additives that may do wonders on beef cattle may have no effect on milk production," he explained.

Dr. Lassiter said certain types of enzymes now being used in fattening beef probably will not do the job in dairy cattle rations. "Until an enzyme is found that is beneficial in high-roughage rations, there is little value in including enzymes in dairy cattle rations," he said.

He noted that little information is available on live yeast cultures and chemobiotics and pointed out that university researchers have not uncovered any evidence that these compounds improve over-all performance of dairy cattle.

"While grinding and pelleting hay for beef cattle and sheep looks promising, this cannot be done with hay that is to be fed to milking cows. Grinding hay results in a drop in butterfat percentage of the milk," he said.

Experiments at Michigan State showed pelleted rations for fattening lambs increase rate of gain, increase feed consumption, require less feed per pound of gain and lower feed cost per pound of gain, Dr. Lassiter said.

Dr. A. L. Esplin, Colorado State University, agreed that pelleted rations for lambs have many advantages. "But the current local cost of converting roughage into pelleted form still outweighs the many advantages of pelleted feed for lambs," he said.

Dr. Esplin, who has conducted studies of completely pelleted rations for lambs for the past five years, said major advantages of pellets are ease in handling, storing and feeding.

Dr. Esplin said lambs will eat more total feed in the pelleted form than in the unpelleted ration. In addition, there is no selectivity—the complete ration is eaten as prepared, he said.

"Lambs usually gain faster on less feed when fed high-roughage pelleted rations. But with all these advantages, the economics still do not favor the feeding of pelleted rations. With present costs, the increased gains and savings in handling and storing of pelleted feed do not pay the cost of processing," Dr. Esplin maintained.

Roughage Comparisons

Dr. Esplin reported that pelleted rations containing 70-80% roughage with 30 or 20% barley gave greater gains than either rations consisting of 60% sun-cured alfalfa and 40% barley, or 100% sun-cured alfalfa. Little difference was noted between the 70 and 80% roughage rations.

"Lambs can be fattened on pelleted sun-cured alfalfa," he said. "However, gains will be less and lambs will require more feed than rations containing 20 to 50% grain."

Dr. Esplin found also that carcass grades of lambs fed the 100% alfalfa ration were consistently lower than those of lambs on other feeds.

Barley, corn and milo in pelleted rations containing 50% grain and 50% sun-cured alfalfa gave about the same gain response. "Differences in rate of gain and efficiency of gain were small between the grains," he said, "and the price should determine which grain to use in making up pelleted rations."

Olin Timm, Dixon, Cal., lamb feeder whose report was concerned principally with feedlot mechanization, also lined up on the "pelleting-doesn't-usually-pay" side. Although conceding that rate of gain under pelleted feeding may be somewhat bet-

(Turn to COLORADO, page 94)

Pfizer Issues Manual For Swine Growers

NEW YORK—A new manual for swine producers, called a "Blueprint for High-Profit Hog Production," has been announced by Chas. Pfizer & Co., Inc. Spokesmen for the firm said this guide to "Life Cycle Management" is designed to help farmers make a self-analysis of their performance as hog producers.

The booklet tells how some hog producers make six times the profit of others in the U.S., and it describes a number of avenues farmers can take to achieve top swine-raising efficiency.

"The manual is a supplemental part of Pfizer's continuing educational campaign on the 'Life Cycle' concept of management with hogs," officials said.

"Based on a survey made state-by-state across the nation, the new manual contains yardsticks any hog grower can use to compare his operation with average and top producers of today. The survey was conducted in cooperation with the land grant college system."

It showed these differences between modern-day swinemen:

(Turn to MANUAL, page 94)

H. E. Bechtel Named to Position with Dawe's

CHICAGO—Dr. H. E. Bechtel has been named director of technical service, Dawe's Laboratories, Inc., it was announced by D. B. Kinkaid, vice president, marketing.

Dr. H. E. Bechtel

Dr. Bechtel succeeds Dr. M. Erdheim, who is transferring to Dawe's international division as director of technical service. Among his new responsibilities, Dr. Erdheim will be in charge of several new products being developed for the international division.

For the past 16 years, Dr. Bechtel has been director of feed research, General Mills, Inc. From 1939 to 1944, he was on the research and teaching staff of Kansas State University.

Dr. Bechtel received his bachelor's degree at Pennsylvania State University and his M.S. and Ph.D. at Michigan State University. He is a past chairman of the American Feed Manufacturers Assn. Nutrition Council. Dr. Bechtel is a member of numerous scientific groups, including American Dairy Science, American Society of Animal Production, New York Academy of Science and the American Chemical Society.

Soybean Product Situation and Outlook Analyzed

By F. C. BISSON
Special Correspondent

CHICAGO—Several pieces of statistical data of great interest to the soybean trade were released recently. All carried what might be called an "official blessing."

The first of these was the short tabulation showing the "soybeans inspected for export" during the week ending Feb. 19. At less than a half million bushels, the beans inspected for export made up by far the smallest weekly total so far this season and the least for an even longer period. The figure came as a big surprise to those in the trade who have been predicting record-breaking U.S. bean movement into foreign channels.

Of course, the 458,755 bu. weekly total can not necessarily be taken as a measuring-stick of what the season's total may be, any more than one should have given too much weight to the 8-million-bushel total the U.S. Department of Agriculture claimed was inspected for export during a single week several months ago. If and when the growers begin to show less reluctance about parting with their beans (and, of course, providing they are not priced out of the world market), the grand total cleared from this country this season should attain a respectable stature.

However, it should be mentioned that it was not many weeks ago that the official figure being circulated as representing the "season to date" inspections for export showed some 17 million bushels more for 1959-60 than for the corresponding period last season. In the meantime, some errors in the official aggregates for this season and 1958-59, combined with recent smaller weekly totals this season than last, have melted down the "overage" figure by about 5 million bushels. The most recent overage figure has been set officially at 11,833,000 bu. Some persons in the trade believe this figure will become smaller before it gets larger.

Also, the Census Bureau recently came through with its monthly tabulation showing the January soybean crush, production of soybean meal and oil and processor stocks of soybeans, bean meal and bean oil as of the end of January, with comparisons.

Instead of showing a smaller Jan-

(Turn to SOYBEAN, page 94)

Memphis Notes Gain In Oil Meal Futures

MEMPHIS, TENN.—Oilseed meal futures made a nice advance on the Memphis Board of Trade last week—a result of extremely cold weather over the nation. The frigid temperatures brought an improved demand for mixed feed and feed proteins.

After soybean oil meal had shown relative weakness at times in nearby options, the commodity gained March 1. Cottonseed oil meal picked up the same day. The feed situation was improved after being slow for some time.

In recent days, cottonseed oil meal has made a gain both in futures and cash, with a fairly firm base established from lower levels. Cottonseed oil meal is still considered relatively cheap, compared with soybean oil meal, one pit observer said.

Memphis basis soybean meal closed March 1 25¢@$1 ton higher than on Feb. 23, unrestricted soybean oil meal closed unchanged to $1 higher, and bulk solvent cottonseed oil meal was 50¢@$1 higher.

Trading volume for the week amounted to 3,300 tons of bulk solvent cottonseed oil meal and 200 tons of unrestricted soybean oil meal.

VIRGINIA MEETNG—New officers of the Virginia State Feed Assn. were elected at the recent Virginia Feed Convention and Nutrition Conference in Roanoke. They are shown in the first picture above. Left to right, Preston Moyers, Beacon Milling Co., Broadway, vice president; W. G. Ritchie, J. S. Ritchie & Sons, Inc., Petersburg, president, and R. L. Barnett, Cooperative Mills, Inc., Roanoke, secretary-treasurer. In the second picture are feed men who handled some of the arrangements for the meeting. Left to right are S. E. Aylor, Lynchburg (Va.) Milling Co., arrangements committee chairman; Flem Ring, Roanoke City Mills; Ray Harper, Roanoke City Mills, retiring association president, and Dr. Ray Parkhurst, Lindsey-Robinson & Co., Roanoke, of the host committee.

USDA Studies 'Price Spread' in Feed

WASHINGTON — The farmer's share of the retail price of formulated poultry feeds in Illinois has remained at about 50% since 1953, according to a report issued by the U.S. Department of Agriculture.

Researchers of USDA's Agricultural Marketing Service found that costs have risen since 1953 for manufacturers and retailers of formula feeds in Illinois, although retail prices of the feeds have declined. Farm prices of ingredients used in formulated poultry feeds have declined also, the report states.

The farmer's share of the retail price remained stable because of increasing manufacture of high-energy feeds, with larger proportions of grain. Because grain needs little processing for use in feed, the farmer's share is greater for the grains than for most other ingredients.

The study on which this report is based is part of a broad program of research designed to reduce costs and increase efficiency in the marketing of farm products. In the feed industry, the farmer is both producer of the ingredients and purchaser of the feed.

A free copy of the report, Marketing Research Report No. 378, "Price Spreads for Formulated Poultry Feeds in Illinois," may be obtained from the Office of Information, U.S. Department of Agriculture, Washington 25, D.C.

Ely Lilly & Co. Forms Elanco Products Co. To Market Ag Products

INDIANAPOLIS—Eli Lilly & Co. has announced the formation of the Elanco Products Co. to market items in the fields of agriculture, industry and home use.

G. L. Varnes

George L. Varnes has been named president of Elanco, which will operate as a division of Eli Lilly & Co. Mr. Varnes was formerly executive director of the Lilly agricultural and industrial products division.

At present, Elanco Products Co. will merchandise and market products which result from Lilly agricultural and industrial applications research.

Mr. Varnes joined Lilly as a salesman in 1940. He was transferred to the home office in Indianapolis in 1942 and has held many management positions, including assistant manager of pricing development, manager of materials control, assistant director of production control, general manager of operations and executive director of operations planning.

He was named executive director of the agricultural and industrial products division in 1954. In 1958, Mr. Varnes became a member of the board of directors of Corn States Laboratories, Inc., Omaha, Neb., a Lilly subsidiary which manufactures and distributes veterinary drugs.

Mr. Varnes holds a bachelor of science degree in pharmacy from the University of Kansas. He is a member of the American Feed Manufacturers Assn., Animal Health Institute and other groups.

Feedstuffs Office

NEW YORK—The New York office of The Miller Publishing Co., publisher of Feedstuffs, has been moved to Room 1101, 52 Vanderbilt Ave. The former address was 551 Fifth Ave. The new telephone number is Oregon 9-2490.

Manager of Purina Product Control Dies

ST. LOUIS, MO.—Claude L. Welch, manager of the product control department for the Ralston Purina Co., died unexpectedly in a St. Louis hospital March 1 after becoming ill at work.

C. L. Welch

Mr. Welch had addressed a group of approximately 400 visiting feed dealers and farmers at Ralston Purina's headquarters Tuesday morning when he became ill. He was taken to Barnes Hospital where he died at 10 p.m. The cause of death was not determined. He had been in apparent good health.

Mr. Welch, who was 51, joined the Ralston Purina Co. in 1930 after graduating from Washington University in St. Louis. He started in the company's personnel department, transferring to the product development department in 1934. He became manager of the product control department in 1944.

Mr. Welch played a key role in the development of Ralston Purina's quality control program. He was recognized throughout the industry as an authority on quality control techniques.

Survivors include his widow, Mary Eleanor Welch, two daughters and a son—Mrs. Donald Ferguson, Greensboro, N.C.; David Welch and Sally Welch of the home—his mother and a brother.

Californians Ponder Credit Problems

By Special Correspondent

SAN FRANCISCO—"Tight money" has caused a deterioration of credit policies in the California grain trade to the point where some 40 grain merchants and feed men from all over northern California gathered here Feb. 26 to discuss the situation. (California is said to be the only state where credit is granted in wholesale grain operations.)

The standing-room-only meeting, held in the San Francisco Grain Exchange and conducted by Howard Boone, Cargill, Inc., San Francisco, indicated real concern over credit abuses, but the only conclusion reached was the appointment of a committee to investigate the matter further. Because the San Francisco Grain Exchange rules cover only cash transactions, the exchange, as a body, did not participate in the discussion, although its members did on an individual company basis.

A. G. Sequeira, credit manager, Balfour, Guthrie & Co., Ltd., San Francisco, reported that since his firm established strict credit regulations eight years ago, it has had no losses. He urged those present to establish a credit association within the industry to begin to combat the situation.

Blair Erigero, Pillsbury Co., Stockton, vice president of the Stockton Grain Exchange, reminded the group that present contracts call for net cash on receipt of invoice, and said that these contracts should be enforced.

Ernest Silverfield, Continental Grain Co., San Francisco, and vice president of the San Francisco Grain Exchange, raised the question as to how contracts could be enforced. One of the suggestions from the floor was that interest be included as a part of contracts, and thereby be made enforceable.

Such action, it was felt, would make it even more difficult to return to a cash basis. Also, customer representatives present objected to having

(Turn to CREDIT, page 39)

Micro-Ingredient Firms Form Additives Council

NEW YORK—A new trade association to be called the Feed Additives Council has been formed. The group said it will attempt to help solve problems vital to the formula feed industry.

Members of the council will include suppliers of micro-ingredients to the feed industry.

A spokesman for the executive committee said that "this important segment of the feed industry will now have an official voice."

The following industry representatives were elected to the organization's executive committee: I. Roy Cohen, Commercial Solvents Corp., New York; J. W. Brooks, Pabst Brewing Co., Milwaukee; V. L. Hill, American Scientific Laboratories, Madison; D. B. Kinkaid, Dawe's Laboratories, Inc., Chicago; D. C. McDermott, Grain Processing Corp., Muscatine, Iowa; L. R. Patton, Sterwin Chemicals, Inc., New York; R. T. Whelan, Nopco Chemical Co., Newark, N.J., and C. W. Whitmoyer, Whitmoyer Laboratories, Myerstown, Pa.

Steps were taken at the council's organization meeting to set up a technical committee to be headed by Dr. H. S. Wilgus, Ray Ewing Co., Pasadena.

Mutual Millers, Dealers Plan Buffalo Meeting

BUFFALO—Program plans for the winter convention of the Mutual Millers and Feed Dealers Assn. at the Statler Hilton Hotel here March 9 are all set.

The morning speaker will be Glenn Siler, head of the Check-R-Mix division, Ralston Purina Co., St. Louis, Mo. Mr. Siler will speak on the "Grain Bank."

Hal Munzesheimer, MMC Corp., will discuss his travels in Europe at the luncheon meeting.

The afternoon program will include a panel and group discussion on the grain storage and handling situation. The group will be headed by Howard Carver, Conewango Valley (New York) Mills; Tom Abbott, Richardson Milling Co., Hamburg, N.Y., and Don Mattison, James H. Gray Milling Co., Inc., Cattaraugus, N.Y.

Fred Herman, Dale Carnegie Associates, Buffalo, N.Y., will discuss "Merchandising and Salesmanship."

A business meeting is scheduled in the morning.

Disease Problem 'Normal' in Maryland

SALISBURY, MD. — Recent cold weather has brought in more diseased birds to be diagnosed here at the Maryland Livestock Sanitary Laboratory.

Dr. I. M. Moulthrop, veterinarian in charge, said the number of broilers coming down with sickness is a normal thing to expect. Most of the birds have respiratory trouble. According to condemnation figures in local dressing plants the number is not higher than last year.

Coccidiosis was reported to be slightly more prevalent than usual last fall, and there is still some around, but now the disease seems to be under control.

Regional Sales Head

PORTLAND, ORE.—Appointment of Paul O. Phelps as regional sales manager of Ames-Harris-Neville Co., has been announced by company officials. Mr. Phelps will succeed James M. Griffin, who has resigned to enter private business.

Mr. Phelps joined the firm in 1927 and has been actively engaged in outside sales since 1935. He will make his headquarters in Portland and will supervise the firm's Pacific northwest sales area.

R. T. Clarke — Russ Anderson

Sales Region Changes Made by General Mills

MINNEAPOLIS — Organizational changes in the Larro Feed operations of General Mills, Inc., have been announced by E. E. Woolley, general manager of the feed division. The Larrowe region, covering the eastern and southeastern parts of the U.S., has been divided into two separate areas. They are now known as the eastern sales region and the southeastern sales region.

R. H. Tomberlin

H. B. Herron, director of sales, has appointed Russ T. Clarke, regional sales manager for the southeastern sales region with headquarters in Charlotte, N.C. He joined the firm in 1947 and has since served as salesman, district sales manager, territorial and market analyst and broiler production and marketing specialist.

Russ Anderson, regional sales manager for the old Larrowe region, now holds the same position in the newly created eastern sales region.

Ray H. Tomberlin has been named assistant to the director of sales for the firm's feed division. He replaces Mr. Anderson, who was promoted to the regional manager's spot. Mr. Tomberlin joined the company in 1950 and has served as a salesman, sales supervisor in Kansas City and district sales manager for the company's Sperry Operations on the west coast.

FDA Says Burlap, Cotton Bags Are Not Food Additives

EVANSTON, ILL. — The textile bag industry has received an opinion from the Food and Drug Administration that burlap and cotton bags are not food additives, according to an announcement by the Textile Bag Manufacturers Assn.

The announcement said this covers, in addition to burlap, cotton goods in the grey, cambric, bleached, backfilled and dress print goods. It covers spot labels, band labels and printed bags when printed with inks free from metal bases. (Metal base inks are a small proportion of inks used and even these inks may be cleared after tests are submitted and the results evaluated. Such a petition has been made and enforcement will be suspended pending FDA action.)

The association said that there has been an acute misunderstanding among bag users of the so called "accepted" or "white list." No package in "toto" will be named on such list because only ingredients are listed there.

The association quoted G. F. Larrick, commissioner of FDA, as saying, "Some people obviously do not understand the working of the new law and they have concluded that unless a material appears on a list of substances generally recognized as safe, it is automatically banned from food."

W. W. Goodrich, assistant general counsel of FDA, was quoted as follows:

"Under the clear terms of the law the substance guaranteed must first be a food. They are food only to the

(Turn to FDA, page 39)

LIVESTOCK PRICES GENERALLY STRONGER

Beef cattle and hog prices showed substantial improvement this week, and added to this good news for producers and feed manufacturers were signs of improvement in egg and broiler prices.

Hog prices advanced March 2 and 3 to set new highs since August, while cattle and lamb prices maintained record levels, too. Prices reported for steers March 2 were the highest since July, and lambs were at their best since August.

Hogs reached $15.50 cwt. Choice steers were up to $29.50. The high for lambs was around $23.

Prices for eggs were strengthened by increased buying of dried eggs by the government and heavier demand to cover needs for the Lenten season. From March 2 to March 3 wholesale egg prices at Chicago advanced ¼@1¼¢ doz., and at New York the cash market was up as much as 1½¢

Higher price levels were reported in some broiler markets. Supplies were reported to be short to adequate and demand fair to good. At mid-week, Georgia producers were getting mostly 18@19¢ lb. at their farms.

Supply Rises, But Delmarva Broiler Prices Swing Up

SALISBURY, MD.—Broiler prices last week in Delmarva swung upward. The price was better than the previous week and also better than a year ago.

According to the Maryland-Delaware Crop Reporting Service, the average price paid per pound on the farm last week was 18.62¢. The week before the price was 18.18¢ and a year ago it was 17.29¢.

This better price came last week in spite of a greater supply of broilers. Delmarva's offerings last week totaled 3,739,000 birds. This was 11% above the previous week and 16% above the corresponding week of 1959.

Growers here fared well during the month of February as compared to February a year ago. The average price paid each month was 18¢. Feed prices at $4.68 cwt. last month were 6% cheaper than a year ago. Broiler chick prices were up slightly, however, $11.50 per hundred, 5% over 1959.

Nationwide, for 22 reporting states, hatcherymen set 48,701,000 eggs during the week ending Feb. 27. This was slightly above the previous week but 2% below the corresponding week a year ago. Settings were up from the previous week in 14 of the 22 states. States showing sizeable increases included Georgia, North Carolina and Mississippi.

Midwest Feed Group Staff Member Resigns

KANSAS CITY — John Wessman has resigned as staff member of the Midwest Feed Manufacturers Assn. and as director of activities of the Feed Production School, Inc., Lloyd S. Larson, executive vice president of the Midwest association, has announced.

Mr. Wessman said that he has made no specific plans for the future but wants to return to work in the machinery and industrial field.

Before joining the feed association, he was engaged in advertising and sales promotion work with the International Harvester Co. in Chicago. He is a graduate of Iowa State University, Ames, in agricultural engineering.

Taste Engineering Gets Flavor Premix Rights

CHICAGO — Exclusive license to manufacture and sell "Liqua-Solid Double Strength" feed flavor premixes in the U.S. has been granted Taste Engineering, Inc., by the Northern Trust Co. Non-exclusive rights have been awarded the firm in foreign countries.

The patent, No. 2921853, relates to the use of flavor bases on a special dry carrier (cob hard woody ring cellulose), "allowing the compounding of dry, free flowing powders of high flavor oil content," according to company officials. "Only 6-8 oz. of this material is used per ton of feed, compared to 1 lb. or more of some other dry flavor products," they add.

Co-inventors are Norman K. Stanton, research director of Taste Engineering, and the late Paul Q. Card, formerly technical director and sales manager of Taste Engineering.

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TURKEY PLAN

(Continued from page 1)

"will pay not less than 23¢ lb. for grade A hen turkeys and not less than 21¢ lb. for grade A tom turkeys, live weight basis."

The feeding program, according to Red Comb officials, involves sex-separation of hens and toms and provides for adjustment of protein intake to the age and weight requirements of the turkey. "All this," they said, "is aimed at lowest cost production of turkey meat."

"Independent" Arrangement

It was reported that the participation of the feed manufacturer, the meat processor and the feed mixer in the program will be under an "independent" arrangement. "The program is a form of cooperative integration, or integration through association," said Red Comb spokesmen. "But there is no mixing of money on the various segments of production. Dealers and individual producers are financed on their own merits."

An official of the packing firm's turkey processing plant commented, "We hope to produce 700,000 turkeys for the national market this year. These will be grown within a 100-mile radius of Monroe. Next year we plan to go over a million."

Bruce Simpson, one of Red Comb's mixer-dealers who will serve as producer contact, said, "Growers keep their independence. They can use any equipment so long as it is good equipment and there is enough of it. They can use any popular breed or strain of poults from a reputable hatchery."

Mr. Simpson, Simpson Bros. Milling Co., said a new corporation, Simpson Turkeys, Inc., will provide husbandry and management services to farmer producers in the Monroe area. This new firm is to be managed by Clyde Mabry, a former assistant county agent.

"Wholesale" Feed

Red Comb mixer-dealers will use Red Comb concentrates to mix with local grains. Red Comb officials said producers will be able to buy their feeds at "wholesale" prices. It was announced also that "there will be no 'protection' markup by the feed manufacturer, since financing of poults and feed will be done at 6% interest." Red Comb also will finance medicine and insurance, if necessary, it was reported.

According to an explanation of the program's details, Red Comb dealer-mixers "will be paid a fixed fee for mixing, delivery and for furnishing husbandry service to growers."

In the growing program, a Red Comb representative visits the grower when he signs the production and marketing agreement. The growers are signed up by mixer-dealers, but "final approval" comes from Red Comb and the meat processing firm, it was reported.

Red Comb spokesmen said a complete inventory of the grower's production facilities is made. The growers then get a list of equipment to do an efficient job. If additional feeders, waterers, brooders or other equipment is needed, the grower is required to buy this equipment. However, the grower can buy any make of equipment he desires.

One official said the program is designed "to deal in flocks of about 5,000 each." He reported that there are some signed-up growers "who are planning to bring five flocks a year to slaughtering age, starting a new flock about every 10 weeks."

Representatives of the industry in the Carolinas who believe the new program offers "the benefits of a price support program, but none of the red tape," summed up the program's advantages this way:

"1. The grower is assured of a market at a floor price guarantee.

"2. The grower is able to get feed at very competitive prices.

"3. Cooperation between various segments of production and marketing will bring greater efficiency and lowered production costs.

"4. Turkeys will be produced on a specific market, so there is no loss of time and motion in hunting a market for the turkeys.

"5. Quality control will be watched carefully throughout growing, processing and marketing of the birds.

"6. The consumer is assured of the highest quality turkey possible."

PURINA

(Continued from page 1)

Montfort, Eure, France. A third plant will be built in the near future at Loudeac, it was announced.

"We are happy to be associated with this type of organization," said Mr. Rowland. "Duquesne, like Purina, is a growth company. In the past year, Duquesne manufactured and sold approximately 250,000 tons of formula feed. The name Duquesne is synonymous with quality in France. We hope that through our association with this fine company, Purina will be able to contribute to the continued growth and development of animal agriculture in France."

Negotiations were handled by the presidents of the two companies. Mr. Rowland visited the Duquesne headquarters at Montfort, France, and Mr. Duquesne visited Purina headquarters in St. Louis. The transaction was an outright purchase of stock and increase in capitalization of the new company. The amount of money involved was not announced.

Supervision of Purina's interest in the joint venture will come in the company's international division. R. Hal Dean, a Purina vice president, is president of this division.

STORM

(Continued from page 1)

vehicles to help farmers haul chicken feed to their farms.

The heating problem for brooders was reported to be not as bad as it could have been because most of the farmers use gas, coal or wood, not electricity, for fuel.

The broiler market in Georgia continued "good," with prices this week at 18@19¢ lb. at the farm.

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BACIFERM HELPS PEET MAKE THE SALE!

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PRODUCTION SCHOOL—Discussion leaders and some of the feed men in attendance at group discussion sessions of the Pacific Northwest Feed Mill Production School are pictured here. In the first photo, left to right, are Robert Adelman, Adelman Machinery Co., Seattle, moderator of the discussion of bulk handling of pellets; Wayne Hutchinson, Butler Mfg. Co., Spokane, group secretary; John Alexander, Alexander & Co., Portland, and Henry Fors, Fors Feed, Puyallup, Wash. In the second picture are Dave Kolden, Reid-Strutt Co., Inc., Portland, secretary of the processing-after-pelleting discussion; L. E. Abbott, General Mills, Inc., Tacoma; Harold Fjarlie, Stanwood's Feed, East Stanwood, Wash., and Art Wilde, California Pellet Mill Co., Seattle, the moderator. In the third picture are Jack Thomas, Jack Thomas Grain & Livestock Co., Idaho Falls, Idaho; C. J. Hendricks, Union Seed Co., Burley, Idaho; Walter Hartje, Larson & Baardson, Inc., Portland, secretary of the pellet mill operation discussion, and Ken Bratney, Reid-Strutt Co., Inc., the moderator. The school was held in Yakima, Wash., under sponsorship of the Washington State Feed Assn.

Pelleting Suggestions Outlined At Pacific Northwest School

By ROGER BERGLUND
Feedstuffs Managing Editor

YAKIMA WASH. — The emphasis was on pelleting at the Pacific Northwest Feed Mill Production School this year, and in discussing the subject, feed men got down to the "fine" points of the various phases of pelleting operations.

Group discussion sessions, with those in attendance taking part, were a highlight of the school, and in these sessions, the discussion leaders and students went over many of the detailed points to be considered in pelleting. The discussions covered everything from processing before pelleting to handling of the finished product.

The school was held in Yakima recently under the sponsorship of the Washington State Feed Assn. (A summary of talks presented at the school appeared in the Feb. 27 issue of Feedstuffs.)

The feed men met in small groups for the discussions, and the aim, said the discussion leaders, was to bring out suggestions and conclusions of practical interest and value. At the end of the sessions, group secretaries summarized many of the opinions, conclusions and recommendations offered by the feed men and the leaders.

Topics under discussion included:

- Processing of feeds before pelleting.
- Pelleting roughage and alfalfa feeds.
- Pellet mill operation.
- Processing after pelleting.
- Bulk storage and delivery.

Summaries of discussions follow:

PROCESSING OF FEEDS BEFORE PELLETING—Processing and handling of feed before it goes to the pellet mill were discussed in group sessions moderated by L. E. Thompson of Reid-Strutt Co., Inc., Portland. Don Journey, Carter-Miller Mill Furnishing Co., Spokane, was secretary.

One factor considered was geographic area where grain is produced and also moisture content of the grain. Some persons observed that grain is harder to grind if it comes from higher humidity areas. One man said that wet grain may slow the grinding operation by 25%.

Less pelleting capacity in cold weather was noted in the discussion. Steam is wet and the amount has to be cut down and capacity is lowered, one feed man said.

The possibility of pre-heating feed going into the pellet mill received considerable discussion. It was mentioned that one person said he had tried this and brought the temperature up to 200°. It was observed that capacity increased 25% when the feed was warm; the steam was less wet; pellets cooled more easily; and the feed gelatinized some.

Mr. Thompson told of a test where a hopper had been traced with steam lines to heat the feed. There was a retention time of 6½ to 8 minutes. And feed was brought up to 120°. A Canadian mill operator said he had put a steam jacket on a conveyor, and the feed received heat for 8 to 10 minutes. Temperature of the feed could be increased to 200° and pelleting capacity was increased. While results were better, he said, the cost of heating the conveyor was too high.

Also mentioned was raising feed temperature to 120° and putting a small amount of water into the pellet mill, with results improved. However, Mr. Thompson noted, if too much water is added, cooling problems are increased. He mentioned

(Turn to page 14)

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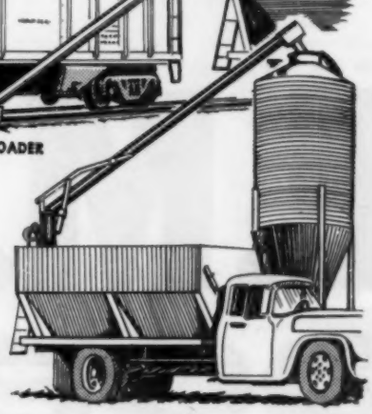

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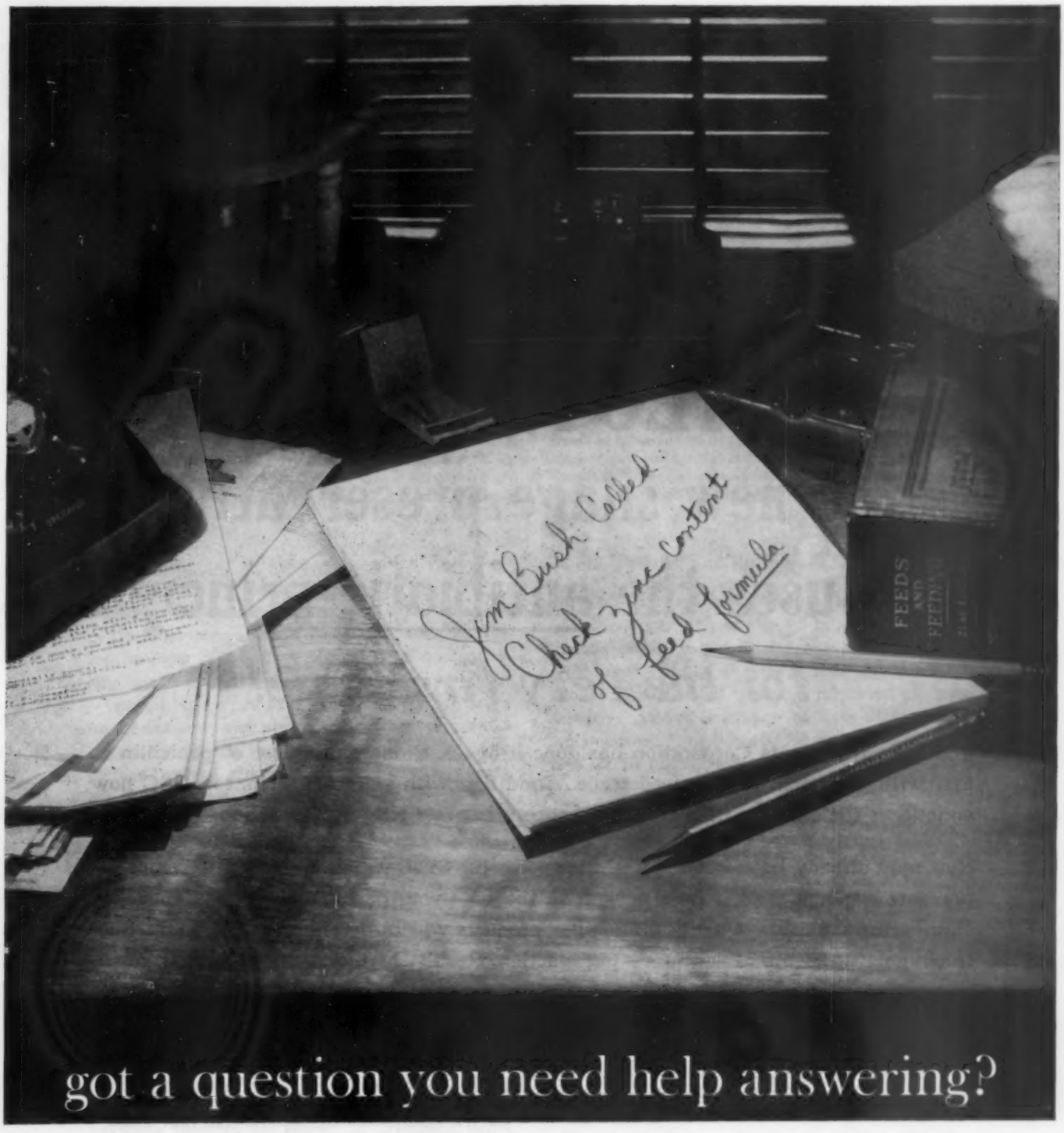

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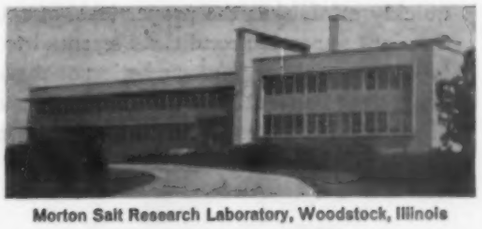
In addition to technical help on salt and trace minerals for formula feeds, Morton offers a complete line of Mixing Salts—Trace-Mineralized, Iodized and Special Mixing. And Morton Mixing Salts are available everywhere in the country. For more information about the technical help and products Morton offers, ask your Morton representative or write:



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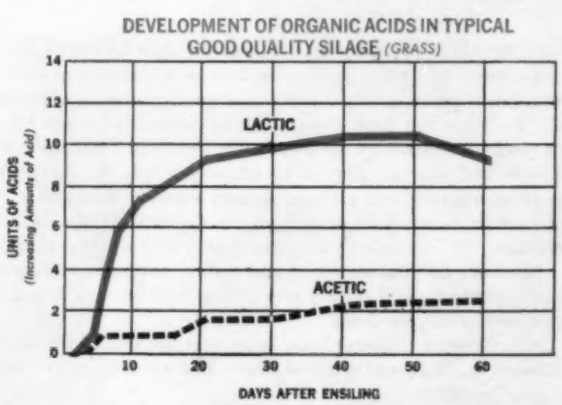
You may already have heard just how successful Silotracin is. First and foremost, it prevents spoilage. And it puts an end to the hold-your-nose smells of bad silage by eliminating the cause! Fact! Unlike other products which merely mask the odors, Silotracin gets rid of the basic cause – putrefaction. Result: high-quality silage, high nutritive value – along with improved palatability, digestibility and feed efficiency. It does the job *antibiotically*. And at low cost!

Its action in silo is selective

Easy-to-use Silotracin, applied directly to forage, quickly establishes the proper level of acidity and the right anaerobic conditions essential to good silage. The *selective, biologic* action of the antibiotic suppresses harmful bacteria that make poor silage, gives helpful bacteria the environment they need to make best-quality silage.

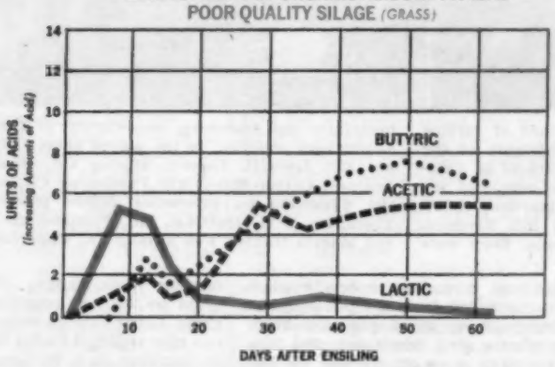
It does the job in the critical first 72 hours

Good grass silage is made in the first 72 hours or it isn't made at all. It's during this critical "now or never" period that Silotracin does its job. It permits the lactic acid-producing bacteria, responsible for high-quality silage, to flourish. It checks the butyric acid-producing bacteria that ruin silage.



This is the "picture" of good silage. The lactic acid is formed quickly – in the first 72 hours – and is sustained at high level throughout the storage period.

DEVELOPMENT OF ORGANIC ACIDS IN TYPICAL POOR QUALITY SILAGE (GRASS)



This is the "picture" of poor silage. Butyric acid, with its offensive odor, predominates. The lactic acid content is negligible and the feed value of the silage is seriously reduced.

FEED EFFICIENCY OF SILOTRACIN-TREATED SILAGE IN MILK PRODUCTION
(Rusoff-LSU)

	SILAGE			
	1	2	3	4
Average for 3 periods of 14 days each, 12 Lactating Holstein Cows	Silotracin	Molasses	Bisulfite	Control
Average lbs. of silage consumed per lb. of 4% Fat Corrected Milk	2.5	2.8	2.6	3.2

In this test, the Silotracin-treated silage was more efficient than the other silages in the production of milk. Less Silotracin-treated silage was consumed per pound of milk produced and this can be presumed to be the result of a greater amount of digestible nutrients in this silage.

Silotracin passes all the tests

Silotracin has been tested for several seasons both in the laboratory and in college field trials. All the results show that with Silotracin, high-quality silage can be expected every time in any type of silo — upright, tower, bunker or trench. It preserves forage nutrients over a wide range of harvesting and storage conditions. It reduces 3 kinds of silage loss: surface spoilage, nutrient loss and loss of dry matter. Excellent results have been obtained with such grasses as Brome, Orchard, Johnson, St. Augustine and Bermuda. It has also been used with complete success on clover and alfalfa and on sorghum, oats, millet and corn. Silotracin is non-corrosive, cannot harm machinery or equipment. It's completely safe for humans and animals.

Silotracin=Better silage =Better milk production

Animals offered a choice showed a preference for silage treated with Silotracin. Excellent palatability has been reported by Rusoff of Louisiana State University. Improved digestibility has also been noted. The Silotracin treatment seems to hasten the breakdown of cellulose so that the rumen bacteria can finish the process both more quickly and more completely.

Silotracin is easy to use and attractively priced

It's added directly to forage by blowing in at the silo or chopper. It can also be broadcast by hand directly on the wagon. Silotracin is a complete preservative by itself, no additives of any kind are needed. You can sell this new, advanced silo preservative *profitably* at a price most attractive to your customers and competitive with all other products on the market today, new or old!

Silotracin available to feed manufacturers in 2 forms

You can now service your customers' best interests — and your own — by selling the antibiotic concept of preserving silage. Silotracin is available in 50-pound multi-wall bags in ready-to-use form. Each pound of ready-to-use Silotracin supplies 1 gram of specially processed *zinc bacitracin* on a soy bean mill feed carrier. A Silotracin concentrate is available for use by manufacturers who want to package their own ready-to-use silage preservative. Write for all the data on Silotracin.

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Feed for Thought

BEEF AND VITAMIN A

Can beef cattle, fed a ration with alfalfa meal and a full feed of yellow corn develop a vitamin A deficiency? According to a recent University of Illinois report, they can. Dr. A. L. Neumann of the University, reported the condition at the recent Illinois Nutrition Conference. He said that cattle at the Dixon Springs Station on a ration of corn, soybean meal, alfalfa meal and corn cobs, developed typical vitamin A deficiency symptoms. They exhibited night blindness, lameness, edema of the lower legs and brisket, convulsive seizures and reduced feed intake. Gains, of course, were also reduced.

Dr. Neumann indicated that he had received many reports from nutritionists, veterinarians, feed men and cattle feeders, of similar conditions on average rations high in corn, hay and corn silage.

Dr. Neumann divided the deficient animals into three groups; treated one group with carotene from alfalfa meal and one with synthetic stabilized dry vitamin A (21,000 units daily from either source). The third group received a basal ration of 64% corn, 10% soybean meal, 1% alfalfa meal aand 25% ground corn cobs.

The dry vitamin A improved daily gains to 190% of the basal and increased vitamin A levels in the blood more than 7.9 times. Carotene boosted daily gains to 170% of the basal and vitamin A blood levels about 5 times.

The steers were then fed massive doses (100,000 units daily) of stabilized dry vitamin A and carotene from alfalfa meal. Again the dry vitamin A was more effective in restoring normal daily gains. It increased gains more than 65% over the group fed carotene vitamin A.

The Illinois results demonstrate that under certain conditions, vitamin A can be a limiting factor, even when carotene appears to be adequate in a ration. They also demonstrate that synthetic, stabilized vitamin A is superior to carotene as a source of vitamin A for beef cattle.

For maximum performance of all of your cattle feeds, add Peter Hand Vitamin A. Write today for current prices and data on Peter Hand Vitamin A. A complete report on the Illinois work is also available on request.

J. R. LINSNER
Director of Technical Services
PETER HAND FOUNDATION

Look for "Feed for Thought" every month. This popular column appears regularly in this same place (page 14) in the first Feedstuffs issue of each month.

Peter Hand

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GROUP DISCUSSIONS — Group discussions of various aspects of pelleting were one of the highlights of the Pacific Northwest Feed Mill Production School in Yakima. The above pictures were taken at a couple of the sessions. In the first photo are Andy Baardson (left), Larson & Baardson, Inc., Portland, and Bill Newman, Carter-Miller Mill Furnishing Co., Spokane. They were moderator and secretary, respectively, of the discussion of roughage pelleting. In the second photo (left to right), are Bill Laswell, Laswell Milling Co., Spokane; Don Journey, Carter-Miller Mill Furnishing Co., secretary of the discussion on processing before pelleting; L. E. Thompson, Reid-Strutt Co., Inc., Portland, the moderator, and Marvin Hunter, Fox Milling Co., Opportunity, Wash.

that preheating alfalfa would enable the material to absorb some moisture. With heat, he said, possibly the hay could be pelleted directly.

Mr. Journey summed up the discussion of preheating by noting that while some have tried it, they feel it is too expensive at this time.

The general suggestion on grinding of material to be pelleted was that the grind be as fine as possible. Some mentioned 3/32 or 1/8" screens. There also was an observation that better mixing of feed can result with fine grinding. Regarding liquid absorption, it was indicated that fine grinding results generally in better absorption, but some felt that one should not go too fine. They said that if material is too fine, molasses balls form to a greater extent. They suggested a good granular grind but not a flour-like fineness. Possible problems with fat also were mentioned.

Some suggested using high speed blenders when liquids are to be added. One man mentioned adjusting the paddles of his mixer and improving results. He said he liked a fairly coarse grind. Another feed man said that he liked to use a high speed paddle mixer and add fat to soybean meal or midds and make a premix. One of the mill operators said he fed molasses into a tube ahead of the mixer and then the molasses went in with the feed.

Mr. Thompson commented on feed mixing problems in general. Frequently, he said, one can obtain a good mix, but subsequent handling and conveying of the mash feed can result in a good deal of separation. Large particles may still be mixed, but fine particles and heavy materials may separate. Use of a drag conveyor to move material into a bin may be more satisfactory from this standpoint than a screw, it was said, although capacity might be less. Mr. Thompson cautioned feed men on such things as over-mixing in batch mixers as well as not mixing for a long enough time; problem of static electricity with medicinals and concentration of a drug in a spout; and separation of materials in bins. Premixing of micro-ingredients was suggested. One man said he observed stratification if he mixed a dairy feed more than four minutes.

Mr. Thompson noted instances where mills put from 1.3 to 4.8% added moisture into mixers to get moisture content of the feed up to a normal level before it leaves the mixer. However, he said, free moisture can be a problem in mixers. Some mills also have a jet into the hammermill.

Pelleting of similar materials separately was mentioned by Mr. Thompson. He told of pelleting separately ingredients which have similar pelleting characteristics and then blending the pellets together. Overall capacity was increased. He described one feed product which included six pelleted materials, rolled barley and molasses.

Noting possible problems with new dies and corrosion, especially when fat-containing feeds are pelleted, Mr. Thompson suggested using a mixture of plaster sand, whole oats and mineral oil to scour out the die. He also said that instead of letting a die sit with fat-containing feed in it, one should leave this other type of material in the die. Finely ground limestone as well as plaster sand can also be used.

PELLETING ROUGHAGE AND ALFALFA FEEDS—Andy Baardson, Larson & Baardson, Inc., Portland, moderated discussions of the pelleting of straight roughage and complete ruminant feeds containing roughage. Secretary was Bill Newman, Carter-Miller Mill Furnishing Co., Spokane, who summarized the discussions. His summary and some additional comments follow:

Mr. Newman said mill operators reported using from 9 to 100 lb. of steam pressure, with the amount varying in relation to hay condition. As a binding agent in alfalfa feeds, molasses is used frequently. Use of more than 10% was said to result in a softer pellet, but production increased. Some said addition of 1% fat would increase pelleting capacity by a half ton per hour.

The importance of a constant and assured flow of ingredients in pelleting was stressed.

Where should fines be returned to the pelleting process? Mr. Newman indicated that most return fines to the pellet mill at the feeder. Others return the fines to the bin ahead of the pellet mill.

Regarding die speed, he said, it was indicated that decreasing speed will increase capacity on grain, and that increasing die speed will result in higher capacity on straight hay.

It was noted that use of wet hay slows processing and results in more fines. Older and dryer hay pellets better. One man observed that with wet hay, his mill's capacity decreased and he was troubled with changing the steam all of the time. Another said that with wet hay, grinding and pelleting were slow and that production was about cut in half.

Fine grinding of material makes for easier pelleting and a better pellet, Mr. Newman pointed out. Some reported using screens of 3/32 to 1/8". When the screen was up to 1/4", capacity was cut about 20%. For making 3/16" suncured alfalfa pellets, some used a 1/8" screen. One firm reported using a 1/16" screen in making a complete pellet. With a 1/4" grind, the pellet was not so good, and production was slowed. Another feed man said that in making a 3/8" pellet, he used a 3600 r.p.m. hammermill and a 1/4" screen on grain; the hay was chopped.

In addition to better gains and feed efficiency, pelleting of alfalfa, it was brought out, can result in reduced storage, handling and insurance costs. There were reports of 25 to 30% savings with use of pellets vs. baled hay or meal. Among uses of pellets mentioned was supplementing poor range; adding 30% grain to the hay resulted in better gains. Labor savings were noted, and one man reported saving $2100 a year in handling in a feeding operation. It was mentioned that pellets made from finely ground alfalfa have been fed to young calves with good results. Improving results from poor quality and weedy hay were noted, too. If some grain is added to improve the feed value of the pellet, results are satisfactory. One man said that he took weedy hay where he was getting 40% usage, pelleted it and got 100% usage of the material. Some persons noted that when more than 60% concentrate is included in a complete pellet, performance of the animal may be reduced.

One feed man said he pelleted a ration of half hay and half grain and got very good results. He was making ⅛" pellets and producing 4 to 5 tons per hour. Grain was ground with the hay, first through a ⅝" Miller mill and then through a 3/16" screen on a hammermill. He added just steam. He said that he could put out as many pellets with a 75 h.p. pellet mill but increased horsepower to 125 and forced the material through better. Another man told of using a 100 h.p. mill and a high speed and doing well on hay, producing 5 tons an hour on straight hay easily.

Some feed men reported pelleting charges of $5 a ton on straight hay and a lower charge if grain is added in amounts of 25 to 50%. Some charge on an hourly basis, up to $30 per hour.

One of the observations on pelleting roughage was that as humidity increases, capacity decreases.

It was noted by some that larger pellets are harder to handle and take longer to cool.

Die sizes ranged from ¼" up to ⅝" for range cubes. Most reported using a ¼" diameter. With a ⅝" pellet, capacity was said to be one third more than on ¼".

Some reported a 5% shrinkage on hay and marked off $1 per ton for this loss.

OPERATION OF A PELLET MILL—Moderating the discussions of this subject was Ken Bratney, Reid-Strutt Co., Inc., Portland, and the group secretary was Walter Hartje, Larson & Baardson, Inc.

Mr. Hartje, in summarizing the discussions, said that there was much interest in pre-conditioning of feed to be pelleted. Advantages of preconditioning through heating were said to include more gelatinization of starches, with the feed more digestible, and a better binding action from the gluten. Also, mash can then absorb more fat and molasses, and oil in the feed may be brought out.

Nobody in the groups reported preconditioning at the mixer or in the bin over the pellet mill. However, feed men discussed the possibility of having steam coils inside or outside the bin.

One person mentioned research on gelatinization, saying he had examined the idea but that it looked too

expensive. Another person said that if starches in dairy feeds were gelatinized, per cent butterfat would be cut down.

Mr. Bratney observed that preheating of feed could be an advantage in cold weather.

Paul Husting, California Pellet Mill Co., noted that the hotter the material when brought to the die, the better the quality. There may be some advantage in pre-heating if, he said, the temperature does not get high enough in the die. He mentioned a mill which raises the temperature of the feed 20 to 25° at the throat of the bin. The feed hits the die as near to 200° as possible. However, not every formula gets that hot.

Temperature of feed is raised 10 to 20° as it comes out of the die. If it goes into the die at 200°, for example, it comes out at 220°. But few formulas are that warm. Usually they come out at 160 to 180°.

Mr. Hartje went on to say the discussion brought out that a high pressure boiler is more efficient than a steam generator and there is less free moisture. Regarding temperature, he said feed going into the die should be close to die temperature. Temperatures of 140-180° for feed into the die were mentioned. The discussion also stressed the use of dry steam and means of obtaining it. Figures mentioned included 140° for broiler feed and 180° for layer feed. The most universal comment, said Mr. Hartje, was that these things are up to the individual operator. It was noted that a system of automatic controls for the operation could be beneficial.

Steam pressures used were said to be mostly high out of the boiler. Pressures of 60 to 100 lb. were mentioned. Some reduce the pressure going into the pellet mill. More fibrous materials need more steam, it was pointed out.

In connection with fat additions to feed, the problem of die corrosion was mentioned. It was suggested that materials be removed before a die is stored. Some said they flush the die with barley or corn after running feeds with added fat. Running through 50 to 100 lb. of barley was mentioned.

For die break-in, it was noted that some run ground flax screenings and 20% fat through the unit. Also used are whole barley, millrun and motor oil. Another practice was to wrap the outside with masking tape; after the holes were filled, the tape was removed and the unit run again. Others mentioned running whole oats for 5 minutes, using corn distillers mash, running the regular formula at slower rate, starting with an easy-to-pellet feed, running 100 lb. of cracked corn. Some pre-heat the die in cold weather.

Regarding fat additions to feeds to be pelleted, some said that adding 2½% caused no more fines but that amounts over 3 or 3½% resulted in more fines in handling. One person said that with small pellets, it was not possible to go over 3%. Some persons use added bentonite in pelleted feeds, while others said they preferred not to. Some added middlings to improve results.

Mr. Husting said that if more than 3% fat is added, it has to be done after pelleting. This is done most successfully if the pellets are reheated and fat is sprayed on. He described a system in which pellets go by percentage feeder into a drum about 7½ ft. long, 2½ ft. in diameter and rotating at 25 r.p.m. The drum, at an angle, has an inside pipe through which fat is sprayed onto the pellets. A heater at the discharge end blows air back and reheats the pellets. The best way is to recool the pellets, but many do not.

Mr. Hartje reported that some of the feed men were adding 5-10% molasses at the pellet mill. Some, if they added over 15%, made the addition to a premix prior to pelleting.

One mill operator said that he used a high speed mixer and some distance and that the molasses went into the feed well when it was piped directly into the mixing chamber. He said 10 to 12% was easy to add and that he had gone up to 15-16%. More, he said, resulted in soft pellets. He said he used as much steam as possible. He indicated he was not heating the molasses.

One person was adding up to 15% molasses and indicated he used a steam jet into the molasses pipe.

Mr. Bratney said 20% molasses on hard pellet machines had been the high but that a midwestern firm was adding up to 30%. He noted that the molasses was heated before it went into the conditioner, that the mash was pre-heated and that dusting was done in the die as the pellets came out. Mr. Husting said that 30% in this case was the formula cut-off but that experimentally higher percentages had been used.

Discussion of pellet mill maintenance, Mr. Hartje indicated, brought out that roller bearing lubrication is every four hours in most cases, every eight hours in some instances and in one case just twice a week. Low expansion, high temperature, metallic base grease were mentioned.

Some check distance between rolls and die at every run or every day. Type of feed has an effect on clearance setting; match cover thickness was mentioned most. Spreaders and plows were not generally used. Most men indicated they left in the die the material they had been running. Others left in the die whole barley; oil and millrun; or oats, cracked corn and oil.

PROCESSING AFTER PELLETING—This discussion was moderated by Art Wilde, California Pellet Mill Co., Seattle, and the secretary recording the comments was Dave Kolden, Reid-Strutt Co., Inc., Portland. Here are some of the suggestions and comments as summarized by Mr. Kolden, along with a few additional notes from the discussions:

Cooling—Vertical coolers are more commonly used than horizontal. Standard construction consists of adjustable louvers on the outside of the drier column and perforated screen material on the inside of the drier column.

Size pellet for crumbling—Feed men indicated that the 10/64" diameter pellet is more predominantly used, with a 3/16" pellet running a close second.

Best way to get an even feed to the crumble roll—The feeder on the pellet cooler should be the same length as the crumble rolls. Rolls are normally installed directly below discharge of cooler.

There should be a constant feed to the rolls, and this can be accomplished by properly adjusting the con-

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trols on the cooler. The discharge feeder on the cooler should operate as constantly as possible by regulating the variable speed drive on the feeder. The pellets being fed to the inlet hopper of the cooler should be introduced so that both columns are always full and material in contact with the Binatrol in the inlet hopper.

Diameter of roll for crumbling—The 6", 8" and 9" rolls are most commonly used. Size can depend on the capacity required for crumbling and type of feed being crumbled.

Six-inch rolls are used more than the other sizes. This diameter, it was said, is generally considered to produce a better quality crumble. There is more of a cutting action on 6" rolls because of the smaller contact between the rolls. Six-inch rolls are lower in cost. However, there are some recommendations that 8 or 9" rolls be used.

The type of material being crumbled is likely to have more effect on creating of fines than the diameter of the rolls.

Proper corrugation on crumble rolls—Suggested were a No. 8 cut on 6" diameter rolls and a No. 10 cut on 8 or 9" rolls. The driven roll is corrugated lengthwise. The idler roll is cut on the diameter or around the circumference, commonly known as a LePage cut.

Use of double-stand crumble rolls—Some feel that a two-roll system is advantageous, that a smaller amount of fines is produced during crumbling because of a gradual reduction of the pellet. However, some do not have the space for a double stand even if desired. One mill uses a ⅛" pellet and a two-roll system to get greater capacity. However, it was mentioned, there could be a problem with a soft core in larger pellets.

What size screens are recommended for sifting crumbles?—(a) The top screen is for pellets and should be sized to allow the crumbles and fines to fall through. (b) The nature of the material used in pellets which are ultimately crumbled can affect the crumbling operation in such a way that the best way to determine the size of screen is the trial and error method. (c) There is no such thing as uniformity in crumbles as this depends upon individual requirements and desired results. (d) Wire screens are more predominantly used than perforated metal inasmuch as there is more open area in the wire screen.

There is a trend beginning in some parts of the country to leave fines in the crumbles; this may ultimately eliminate the sifting operation in some areas.

Some mills are adding mash to their feeds and leaving fines in. Feather picking may be a problem if "too clean" a pellet is used, a feed man said.

"If you can get the feeder to take fines, you can be sure of his having the complete formula," one observer said. "Some people are taking a second look at this. Some poultry feeders leave the fines in the pelleted feed.

"We can't see much feed conversion difference. Apparently the birds are not wasting feed. We leave fines in chick feeds but not laying or growing feeds. In turkey feeds for the early part of the growing period, mash is added with the crumbles and fines are left in."

One feed man indicated he was putting 2½% molasses in poultry feed to get a harder pellet and less fines. It was noted that some add up to 7% molasses in poultry feeds.

Where should fines be returned?—Fines should be returned to the feeder on the pellet mill rather than to the bin over the pellet mill. Substantial separation of the heavier material being returned to the bin can be severe enough to change the actual formula being processed.

Is reheating pellets after cooling useful for high-fat pellets?—Normally 2 or 2½% of fat is added to the feed prior to pelleting. If high-fat

(Turn to SCHOOL, page 83)

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Pelleted Rations for Beef Cattle

"If researchers can find ways and means of getting improved feeding values from pelleting high-grain cattle rations approaching improvements in high-roughage cattle rations, then the door will be opened wide for large-scale pelleting of cattle rations."

By Robert Rhodes, Walter Woods and Wise Burroughs
Iowa State University

Considerable interest in pelleting rations for beef cattle has existed since 1955 when the University of Illinois Agricultural Experiment Station at Dixon Springs first reported rather striking results when they fed a pelleted hay ration vs. long hay, ground hay or chopped hay. This work was repeated at the Illinois station in 1956 and again they got substantially better feeding results from the pelleted hay as compared to other forms of the same hay. Immediately, people began asking questions concerning other types of cattle rations. Could they be pelleted and could the same advantages be obtained when grain was included with the hay?

In addition to improved feeding value resulting from pelleting a cattle ration, interest in pelleting by feeders and feed industry people has stemmed from other advantages which might result from pelleting. Some of these advantages center around (1) increased weight gains in cattle due to higher feed consumption resulting from pelleting, (2) ease in bringing cattle upon a full feed of grain, (3) less labor resulting from self-feeding a complete pelleted ration, (4) proper nutrient balance in each pellet fed in which sorting by cattle at the feed bunk cannot occur and (5) decreased storage space required by pellets and ease of conveying feed using mechanical equipment.

After "eyeing" these advantages which might be achieved by feeding a completely pelleted cattle ration, the cattle feeder and the feed manufacturer asks himself, will these advantages out-weigh the cost of pelleting? In attempting to answer this question, it is obvious from the start that some of these advantages are hard to place dollars and cents values upon. Many of these potential advantages will be of more importance to large cattle feeding operations and of less importance to small cattle feeding operations. Nevertheless, the primary consideration in determining whether complete pelleted rations for beef cattle are worth the "chips" can be measured since feed costs per unit of liveweight gain is the primary consideration in any profitable cattle feeding operation. Where then do we stand on this critical point of feed cost per unit of gain when we pellet complete cattle rations?

Other Experiments

Some 20 or more experimental comparisons on pelleting beef rations have been reported during the past four years by college experiment stations in California, Indiana, Oklahoma, Illinois, Wyoming, Texas and Kansas. The rations fed in these experiments have varied from all-roughage rations to rations having less than 20% roughage and more than 80% concentrate feeds. The results of those experiments, when summarized as a group (Table 1), point to distinct differences in results from pelleting depending upon the amount of roughage included in the pellet. For ease of comparison, the results in Table 1 were arranged on the basis of amount of roughage included in the pellet.

It is obvious from an inspection of this data that feed consumption in beef cattle was significantly increased by pelleting the ration when the ration was high in roughage, and that the reverse was true when the ration was low in roughage and high in concentrates. For example, in the three all-roughage rations, pelleting increased feed consumption by an average of 30% whereas in the three rations which contained only 16% roughage, pelleting actually decreased feed consumption by 5%. Intermediate amounts of roughage in the pellet had intermediate influences upon feed consumption.

Liveweight gain stimulation in cattle resulting from pelleting followed the same pattern as feed consumption stimulation in which differences were even more self-evident. That is, liveweight gain was stimulated an average of 50% by pelleting the three all-roughage rations, whereas liveweight gains were decreased by 4% where only 16% roughage was included in the pellet.

Feed conversion, or feed per hundred pounds gain in cattle, was also influenced by amount of roughage in the pellet, however there was not a reversing of effect as was the case of feed consumption and also the case with average liveweight gain. With respect to the three all-roughage pellets, feed conversion by pelleting was improved by 40%, whereas some improvement (4%) persisted by feeding the lowest roughage pellets even though this improvement from pelleting was relatively small in magnitude.

Break-Even Price

Using the feed conversion data presented in Table 1 as a basis of computation and using assumed current feed prices, one can estimate a "break-even" price per ton which could be paid for the process of pelleting beef cattle rations containing different amounts of roughages. These estimated "break-even" prices for pelleting are $8 for an all-roughage pellet and $2 to $3 per ton for pellets containing from 16-75% roughage.

The computation of these break-even prices on a ton basis can be illustrated by taking an assumed current feed price per pound of cattle ration fed and multiplying this value times the number of pounds of feed saved by the pelleting process.

For example, the feed saved by the pelleting process averaged 7% or

$$\frac{881\text{-}820 \times 100}{881}$$

in the seven experiments summarized at the bottom of Table 1 where the highest levels of concentrates were fed. If one assumes 2¢ to be the value of a pound of these high-concentrate rations, and if one multiplies this 2¢ value times 140 lb. (7% of 2,000 lb.), the feed saved by pelleting, then one gets $2.80 as the average break-even price for pelleting in the type of cattle rations fed in these experiments.

Reach Practical Decision

Since most cattle rations contain from 16-75% roughage, a practical decision on the virtues of pelleting can be reached by both the feeder and the feed processor by assuming

TABLE 1. Summary Pelleted Rations for Beef Cattle
As Reported From College Experiment Stations

% Roughage Ration	Type Roughage	Type Concentrate	Station & Year	—Feed Intake— C.	Pellet	—A. D. G.— C.	Pellet	Feed/Cwt. Gain C.	Pellet
100	Alfalfa hay	None	Illinois 1955	11.0	15.7	0.63	1.73	1,732	906
100	Alfalfa hay	None	Illinois 1956	11.3	16.5	0.18	1.77	5,160	792
100	Alfalfa hay	None	California 1957	19.3	22.4	1.75	2.22	1,103	1,010
		Average		13.9	18.2	0.86	1.91	1,616	953
80	Alfalfa plus C. S. hulls	Supp.	Oklahoma 1958	19.8	21.8	1.89	2.33	1,044	939
74	Alfalfa plus C. S. hulls	Supp.	Oklahoma 1957	16.9	16.9	1.78	1.61	942	1,056
70	Corn cobs	Supp.	Indiana 1958	22.4	25.5	1.57	1.98	1,500	1,290
70	Alfalfa hay	Barley plus Supp.	California 1957	20.0	20.6	2.07	2.29	967	918
		Average		19.8	21.2	1.83	2.05	1,092	1,034
60	Alfalfa-Beet Pulp-C. Silage	Barley-Corn-Supp.	Wyoming 1955	23.3	22.4	2.41	2.45	967	923
60	Alfalfa-Beet Pulp-C. Silage	Barley-Corn-Supp.	Wyoming 1956	25.6	29.4	2.66	2.83	962	1,039
52	C. S. hulls plus alfalfa	Milo plus Supp.	Texas 1958	33.4	33.6	2.26	2.42	1,478	1,388
45	Corn cobs	Corn plus Supp.	Indiana 1958	24.2	25.7	2.06	2.18	1,170	1,180
40	Corn silage	Corn plus Supp.	Indiana 1958	13.4	16.0	1.90	2.20	699	730
40	Alfalfa plus B. pulp	Barley plus Supp.	California 1957	20.0	16.3	2.46	2.14	809	768
		Average		23.3	23.9	2.29	2.37	1,017	1,008
30	Alfalfa hay	Corn plus Supp.	Kansas 1955	24.1	19.6	2.66	2.57	907	764
20	Alfalfa plus C. S. hulls	Milo plus Supp.	Oklahoma 1958	16.8	12.7	1.47	1.35	1,142	945
20	Alfalfa plus C. S. hulls	Milo plus Supp.	Oklahoma 1958	19.1	16.8	2.26	2.05	848	819
20	Corn cobs	Corn plus Supp.	Indiana 1958	22.5	21.7	2.17	2.13	1,040	1,020
16	S. silage plus alfalfa	Milo plus Supp.	Oklahoma 1957	18.6	17.7	2.09	2.17	890	816
16	S. silage plus alfalfa	Milo plus Supp.	Oklahoma 1958	19.3	18.4	2.36	2.45	818	751
16	S. silage plus alfalfa	Barley plus Supp.	Oklahoma 1958	14.9	13.9	2.34	2.04	636	681
		Average		19.3	17.3	2.19	2.11	881	820

TABLE 2. Iowa Pelleted Cattle Ration

Ingredient	Lb.
Ear corn, ground	1,362
Reground oat hull feed	250
Cane molasses	125
Dehydrated alfalfa meal	100
Soybean oil meal	100
Bentonite	25
Minerals	31
Urea (feed grade)	6
Stilbosol	1
Total	2,000

a $2 to $3 per ton increased feeding value due to pelleting and adding this to the labor-saving and other convenience advantages of pelleting. When one does this, he is likely to come to the conclusion that for some beef cattle feeding operations, pelleting a complete ration is likely to prove advantageous over the feeding of a non-pelleted complete ration.

By the same line of reasoning, he is likely to come to the conclusion that for many cattle feeding operations, especially the smaller unit operators who produce on the farm the majority of the feeds they feed to their cattle, pelleting the complete feed is not as attractive as feeding conventional non-pelleted feeds.

These generalizations or conclusions likely have many exceptions in feeding practice since cattle feeding conditions and costs vary considerably in different parts of the country and even within a given community.

Finally, more research is needed on complete pelleted feeds for cattle. If researchers can find ways and means of getting improved feeding values from pelleting high-grain cattle rations approaching the improvements noted in high-roughage cattle rations, then the door will be opened wide for large-scale pelleting of cattle rations which appears to be the trend now going on extensively in lamb feeding.

Mention should be made of results obtained with pelleted rations for cattle at our Iowa station. Two experiments have been conducted to date with high-grain pellets. The ingredient makeup of the pellet tested is given in Table 2.

The feed conversion results using this pellet showed a $2@3 advantage per ton over using a conventional corn-hay-supplement on pelleted ration. These results were similar to results obtained at other experiment stations (Table 1) using pellets containing some grain or concentrate feeds along with the roughage.

Commercial Feeds Sold in Nebraska Up

LINCOLN, NEB.—Total commercial feeds sold at retail in Nebraska for the 1958-59 fiscal year topped the 1957-58 period by 150,360 tons, according to the annual report on commercial feeds by the Department of Agriculture and Inspection.

Feeds sold in the July 1, 1958-June 30, 1959, period totaled 816,096.8 tons compared with 665,736.8 in the same period in 1957-58.

Starter, grower, layer and concentrate poultry feeds totaled 165,294.3 tons.

In the dairy and cattle feeds, cattle totaled 221,685.4 tons, dairy followed with 28,084.3 tons and calf feed sold totaled 7,451.7 tons for a grand total of 257,221.4 tons.

Hog, pig and sow feed, supplement and balancer totaled 204,719 tons.

Other feeds accounted for 188,862.1 tons of the total commercial feeds sold. Included in this grouping are: pets and furs, 5,462.2; alfalfa, 39,491.4; minerals, 27,076.5; molasses, 13,515.8; vegetable meals and meat products, 95,369.3; medications, 1,625.6, and unidentified feeds, 6,321.3.

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Never before . . . the sure, safe convenience of Armstrong's FAST POSITIVE ACTION VALVE for flow control of nearly *all* grain elevator, feed and mill operations. Automatic operation assures dependable overload protection, fast automatic closing if pressure or power fails. Electrically operated if preferred.

8" x 8" size $99.50 f.o.b. Fairborn, Ohio.
All sizes available from 6" up.

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PILOT BRAND OYSTER SHELL

Gives Feed Dealers Everywhere

A FULL MEASURE OF PROFIT

PILOT BRAND is in demand the year 'round. There are no slack seasons. Best of all, you always make a good profit. Here are important reasons why:

PILOT BRAND is an ideal eggshell material.

PILOT BRAND helps poultry raisers get top production of stronger-shelled eggs.

PILOT BRAND is uniformly pure calcium carbonate, kiln-dried.

PILOT BRAND costs less per usable pound.

Powerful national advertising in leading farm and poultry publications and on 70 radio stations does a good job of pre-selling for you, and assures you repeat business.

Remember, there is no adequate substitute for PILOT BRAND Oyster Shell. It's a sure-fire volume and profit builder.

PILOT BRAND OYSTER SHELL FOR POULTRY

Oyster Shell Products Company
Mobile, Alabama

Convention Calendar

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

Nov. 25-26—American Society of Animal Production; Hotel Sherman, Chicago, Ill.; sec., Clair E. Terrill, Animal Husbandry Research Division, Agricultural Research Center, Beltsville, Md.

March 7-8—Grain & Feed Dealers National Assn.; Hotel Muehlebach, Kansas City; sec., Herbert L. Sharp, 400 Folger Bldg., Washington 5, D.C.

March 9—Mutual Millers & Feed Dealers Assn.; Statler-Hilton Hotel, Buffalo, N.Y.; sec., Mrs. Donald E. Mattison, Box 8, Cattaraugus, N.Y.

March 13-17 — Grain Elevator & Processing Superintendents; Jung Hotel, New Orleans, La.; sec., Dean M. Clark, "Grain" Magazine, 1120 Board of Trade, Chicago 4, Ill.

March 17-18—Oregon Feed & Seed Dealers Assn.; New Sheraton Hotel, Portland, Ore.; mgr., Russ Hays, 702 Lewis Bldg., Portland, Ore.

March 17-18 — Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Richard D. Creek, University of Maryland, Department of Poultry Husbandry, College Park.

March 23—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati; sponsored by Distillers Feed Research Council; exec. director, Dr. Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati, Ohio.

March 23-24—National Broiler Industry Conference; Dinkler-Plaza Hotel, Atlanta, Ga.; vice pres., Frank Frazier, P.O. Box 368, Richmond, Va.

March 27-29 — Colorado Grain, Milling & Feed Dealers Assn.; Shirley-Savoy Hotel, Denver; sec., O. W. Eriksen, 519 Boston Bldg., Denver 2.

March 29—New Jersey Poultry Nutrition Institute; Rutgers University, New Brunswick, N.J.; R. L. Squibb, chairman, Poultry Science Department.

March 31-April 2—Pacific Dairy & Poultry Assn. Exposition and Convention; Stardust Hotel, Las Vegas, Nev.; association office, 1304 E. 7th St., Los Angeles 21, Cal.

April 1-2 — Texas Grain & Feed Assn., Shamrock Hotel, Houston; sec., Ray B. Bowden, 407 Fort Worth Club Bldg., Ft. Worth, Texas.

April 5-7—Nebraska Grain & Feed Dealers Assn.; Pershing Municipal Auditorium, Lincoln; sec., Howard W. Elm, Trust Bldg., Lincoln, Neb.

April 6—Purdue Egg Day; Purdue University, Lafayette, Ind.; David D. Jackson, Extension Poultryman.

April 10—Informal Poultry Nutrition Conference; Chicago, Ill.; Dr. M. L. Sunde, Poultry Department, University of Wisconsin, Madison.

April 11-13 — Poultry and Egg National Board, LaSalle Hotel, Chicago, Ill.; mgr., Floyd Geil, 8 S. Michigan Ave., Chicago 13, Ill.

April 17-19—Animal Health Institute; Shoreham Hotel, Washington, D. C.; sec., D. L. Bruner, 512 Shops Bldg., Des Moines 9, Iowa.

April 21—New England Dairy Feed Conference; Hotel Lenox, Boston, Mass.; chm., Dr. Stanley N. Gaunt, Dairy and Animal Science Dept., College of Agriculture, University of Massachusetts, Amherst.

April 22—Indiana Cattle Feeders Day; Purdue University, Lafayette, Ind.; chm., Dr. W. M. Beeson, Animal Science Dept.

April 21-23—California Hay, Grain & Feed Dealers Assn.; Ambassador Hotel, Los Angeles; sec., John Gilmore, Blue Anchor Bldg., 1400 10th St., Sacramento 14, Cal.

April 21-23—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., Orris E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

April 22 — Nebraska Livestock Feeders Day; University of Nebraska, College of Agriculture, Lincoln; chm., Wm. J. Loeffel, Animal Husbandry Dept., Lincoln 3, Neb.

April 24-28—Business Management Program, sponsored by Southeastern Poultry & Egg Assn., University of Georgia, Athens; sec., Harold E. Ford, 235 East Ponce De Leon Ave., Decatur.

May 1-4—National Fisheries Institute; Hotel Fontainebleau, Miami Beach, Fla.; asst. gen. mgr., Mal Xavier, 1614 20th St. N.W., Washington 9, D.C.

May 9-11 — American Feed Manufacturers Assn.; Conrad Hilton Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

May 9-11 — Association of American Feed Control Officials; Sheraton-Blackstone Hotel, Chicago; sec., Bruce Poundstone, Feed and Fertilizer Dept., Agricultural Experiment

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Manufacturers and dealers everywhere use Minnesota Brand meal, pellets or grits. *Extra protein* sharpens appetites, boosts production. Wire, write or phone for latest quotes.

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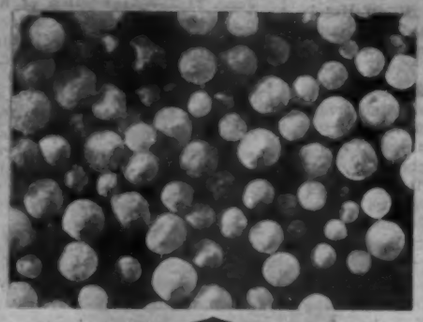
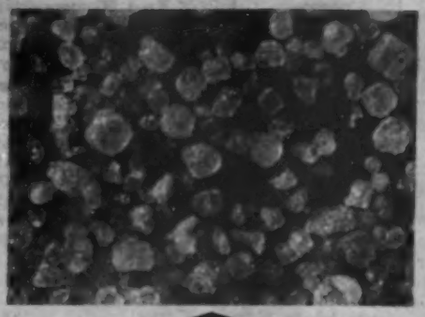


Grace Micro-Prilled Urea Feed Compound — The smooth, round balls are free-flowing, non-caking



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PRODUCT B

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✓ **Easy Blending In Any Standard Mixing Equipment**

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* Micro-Prilling, a special Grace process, produces a feed compound in the form of tiny balls that are truly free-flowing. Each ball is clay-coated to prevent caking.

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ST. LOUIS—8230 Forsyth, PArkview 7-1715

CALENDAR FOR 1960-61

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Station Bldg., University of Kentucky, Lexington.

May 15-16—Missouri Grain & Feed Assn.; Hotel Governor, Jefferson City; sec., D. A. Meinershagen, Higginsville.

May 15-17 — National Cottonseed Products Assn.; Roosevelt Hotel, New Orleans, La.; sec., John F. Moloney, Box 5736, Memphis 4, Tenn.

May 23-27 — Southeastern Egg Quality and Grading School; University of Georgia, Athens; sponsored by Southeastern Poultry & Egg Assn., sec., Harold E. Ford, 235 East Ponce De Leon Ave., Decatur.

June 12-14—Eastern Federation of Feed Merchants, Inc.; Whiteface Inn, Lake Placid, N.Y.; exec. director, Austin W. Carpenter, Sherburne, N.Y.

June 13-15 — American Association of Feed Microscopists; Hilton Hotel, San Antonio, Texas; sec., G. M. Barnhart, Missouri Department of Agriculture, Jefferson City, Mo.

June 14-15 — Alabama Poultry Industry Assn.; Municipal Auditorium (Exhibits) and Thomas Jefferson Hotel, Birmingham, Ala.; sec., W. L. Walsh, Box 567, Montgomery.

June 14-17—NEPPCO Egg Quality School; Rutgers University, New Brunswick, N.J.; Dr. A. Van Wagenen, NEPPCO, 10 Rutgers Place, Trenton 8, N.J.

June 17-18 — Delmarva Chicken Festival; Selbyville, Delaware; Delmarva Poultry Industry, Inc., R.F.D. No. 2, Box 47, Georgetown.

June 19-21—Indiana Grain & Feed Dealers Assn.; Mid-Summer Convention; French Lick-Sheraton Hotel, French Lick; sec. Fred K. Sale, 600 Board of Trade Bldg., Indianapolis 4.

June 19-22—The American Dairy Science Assn.; Utah State University, Logan; sec., H. F. Judkins, 32 Ridgeway Circle, White Plains, N.Y.

June 21-22—Association of Southern Feed & Fertilizer Control Officials; Riverside Hotel, Gatlinburg, Tenn.; sec., Maurice B. Rowe, Department of Agriculture, 1119 State Office Bldg., Richmond 19, Va.

June 23-24—Northeastern Poultry Producers Council Business Management Conference for Egg and Poultry Marketing Cooperatives; Hotel Viking, Newport, Rhode Island; Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

July 23-26 — Georgia Feed Assn.; General Oglethorpe Hotel, Wilmington Island, Savannah; sec., Will L. Kinard, Suite 210, 3240 Peachtree Road Bldg., Atlanta 5, Ga.

Aug. 2-5 — Poultry Science Assn.; University of California, Davis; sec., C. B. Ryan, Texas A&M College, College Station.

Aug. 14-18—Business Management Program, sponsored by Southeastern Poultry & Egg Assn., University of Georgia, Athens; sec., Harold E. Ford, 235 East Ponce De Leon Ave., Decatur.

Sept. 1-6—International Congress on Nutrition; Sheraton-Park Hotel, Washington, D.C.; sponsored by International Union of Nutritional Sciences; sec., Milton O. Lee, 9650 Wisconsin Ave., Washington 14, D.C.

Sept. 14-16—National Feed Ingredients Assn.; Liggetts Holiday Inn, Burlington, Wis.; sec., Paul W. Bone-

Sept. 2?-23 — Feed Production Moines, Iowa.

School; Continental Hotel, Kansas City; sponsored by Feed Production School, Inc.; pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Sept. 22-23 — Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; chm., Dr. E. L. Stephenson, Department of Animal Industry and Veterinary Science.

Oct. 4-6 — Northeastern Poultry Producers Council; Exposition and Convention; Onondaga County War Memorial Bldg., Syracuse, N.Y.; Doris Endebrock, Exposition Mgr., 10 Rutgers Place, Trenton 8, N.J.

Oct. 5-7—Texas Nutrition Conference, Texas A&M College Station; chm., Dr. J. R. Couch, Department of Poultry Science.

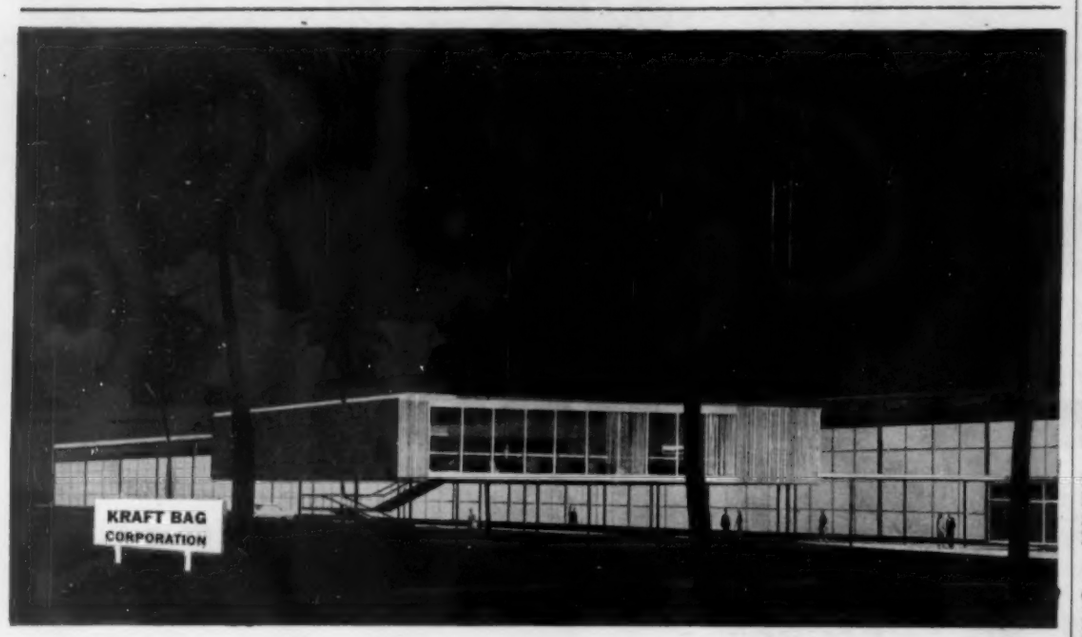
Oct. 11-12—Virginia State Poultry Federation convention and trade show; Hotel Roanoke, Roanoke, Virginia; sec., J. Paul Williams, 615 East Franklin Street, Richmond 19.

Oct. 12-13 — Association of American Feed Control Officials Annual Meeting; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Feed and Fertilizer Dept., Agricultural Experiment Station Bldg., University of Kentucky, Lexington.

Oct. 16-18—Kentucky Poultry Federation and Kentucky Poultry Improvement Assn.; Kentucky Hotel, Louisville; John W. Tuttle, field manager.

Oct. 16-20—Business Management Program, sponsored by the Southeastern Poultry & Egg Assn., University of Georgia, Athens; sec., Harold E. Ford, 235 East Ponce De Leon Ave., Decatur.

Oct. 20-21—Cooperative G.L.F. Ex-



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Here, in one giant integrated operation, logs from our own forest lands are turned into pulp, then into paper, and finally into heavy duty multiwall shipping sacks, using the most modern machinery and equipment the industry affords.

This expansion of our facilities is one more step in our constant efforts to provide our customers with the best in quality and service.

We invite your inquiries.

Paper Mill at St. Marys, Ga.

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Chillicothe, Illinois

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BUTLER POLLYPHOS has an all time high phosphorus content of 19% with a minimum 32% — maximum 35% calcium and no more than 0.19% fluorine.

BUTLER POLLYPHOS can be obtained in 100 lb. multi-wall bags, in bulk, or in truck or carload lots.

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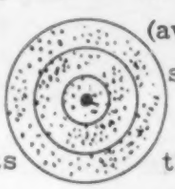
greatly improves dispersion of penicillin in your feeds ...with a minimum loss of activity

Micro-Pen (special coated procaine penicillin G, Lilly) has been developed especially for the feed industry to solve two micro-ingredient mixing problems: poor stability and uneven dispersion. Each Micro-Pen crystal is approximately one-fourth the size of most other feed-grade penicillin crystals. And each minute crystal of Micro-Pen is specially coated to maintain stability and potency. Micro-Pen means more penicillin particles to disperse and more stable particles retained in the feed.

The end result: a feed that more consistently delivers the proper amount of growth-giving, health-protecting penicillin to the animal.

Simple comparison shows how Micro-Pen is dispersed. ...Ordinary feed-grade penicillin (average size, 300 microns) gives a rifle-like effect. The dispersion pattern is small and covers only a fragment of the target or ton of feed. Micro-Pen  (average size, 75 microns) gives a shotgun-like effect. The dispersion pattern is widespread and blankets the target or ton of feed.

*Micro-Pen provides more particles per unit of feed**

APPROXIMATE NUMBER OF PENICILLIN PARTICLES/GRAM OR POUND IN A SUPPLEMENTATION LEVEL OF 4 GRAMS/TON

AVERAGE SIZE (In Microns)	PARTICLES/GRAM	PARTICLES/POUND
25	90	42,000
50	11	5,160
75	3	1,320
100	1	546
150	0.6	258
250	0.1	42
300	0.05	24

*Please note that Micro-Pen contains 55 times more particles per unit of feed than the penicillin which measures 300 microns.

For more research information, write
Eli Lilly and Company, Agricultural and Industrial Products Division, Indianapolis 6, Indiana

Lilly

change, Inc.; stockholders annual meeting; Onondaga War Memorial Bldg., Syracuse, N.Y.

Oct. 27-28—National Swine Industry Conference; University of Kentucky, Lexington.

Nov. 2-3—Illinois Feed Assn.-Illinois Poultry & Hatchery Federation, joint convention; Springfield Armory, Springfield; sec., IFA, Dean M. Clark, 141 W. Jackson Blvd., Chicago 4; sec., IPHF, Aubrey Harless, Shelbyville, Ill.

Nov. 2-3—Kansas Poultry Assn.; Broadview Hotel, Wichita; sec., Harry J. Reed, Box 663, Manhattan.

Nov. 16-17—Missouri Poultry Improvement Assn.; Hotel Continental, Kansas City; sec., E. M. Funk, Columbia, Missouri.

1961

Jan. 12-13—Michigan Feed & Grain Dealers Assn.; Michigan State University, Kellogg Center; sec., Nevel Pearson, P.O. Box 472, East Lansing.

Jan. 13—South Carolina Poultry Festival; Batesburg - Leesville; sec., W. E. Sanders, Batesburg.

Eastern Sales Head Is Named by Shanzer

SAN FRANCISCO—L. Joy Allen, veteran grain industry sales executive, has rejoined Shanzer Mfg. Co. as sales manager for the eastern half of the U.S.

L. Joy Allen

With the exception of a few months in late 1959, Mr. Allen has been with the firm more than 12 years.

In addition to sales supervision east of the Mississippi, he will direct all company service work east of Denver.

Valley Mills Sales Meeting Is Held

VICKSBURG, MISS.—"Start Now to Stop Summer Sales Slumps" was the theme of a sales meeting conducted by Valley Mills, Vicksburg.

Talks on sales methods, new grade A feed products and undeveloped potentials that can be used to prevent the customary summer decline in tonnage were given by W. C. Roberson, sales manager; V. C. Florian, general manager; Dr. Elbert Day, consulting nutritionist; Martin Schroll, credit manager, and Harry R. Gillespie, merchandising manager.

One feature of the two-day session was the "Van Board" parade when the newly decorated fleet of trailer vans rolled by the Hotel Vicksburg to give the group an opportunity to view the trucks decorated with cartoons promoting the firm's feed products.

A banquet closed the sales meeting with Lionel Addamus, New Orleans, immediate past district governor of district 29, Toastmasters International, giving a humorous talk advocating the adoption of the apple as a national fruit.

Poultry Unit Election

KANSAS CITY—Officers of Associated Poultry & Egg Industries were reelected for a second term at the group's annual meeting recently at Hotel Muehlebach here during the 1960 Fact Finding Conference.

The organization, which is composed of national and regional poultry and egg trade associations, again chose M. C. Small, National Turkey Federation, as president; Harold Ford, Southeastern Poultry & Egg Assn., vice president; Harold M. Williams, Institute of American Poultry Industries, secretary, and Don M. Turnbull, American Poultry & Hatchery Federation, treasurer.

feed them "sea-powered"

MANAMAR

for bigger profits

Faster gains, better feed conversion and finish are the yardsticks your feeder-customers will use to measure the worth of the feeds you sell them. This suggestion is worth money: Put the "Sea Power" ingredients to work for you by supplementing your feeds with MANAMAR, rich in B_{12}, B-complex factors, trace minerals, the unidentified growth factors and fish proteins. Order your MANAMAR today!

Our laboratories are here to serve *you*. Call on us for help with your feeding and mixing problems.

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FEED ENGINEERS Dept. F
Manufacturers of MANAMAR "Sea Power" Supplements
Berth 42, Outer Harbor, San Pedro, California • 145 West First Street, Dubuque, Iowa

ONE TWENTY-TON REASON SOLULAC IS ALWAYS YOUR MOST ECONOMICAL SOURCE OF UNIDENTIFIED GROWTH FACTORS

... in economical bulk carloads, 50 or 100 lb. bags, can be shipped quickly to any point in the U. S.

SOLULAC is guaranteed to be *free flowing* in whatever form you order. And there are more good reasons it will *pay* you to keep SOLULAC in your feed formulas. Because SOLULAC is a fermentation product from corn, it's *richer* in the unidentified growth factors found *exclusively* in distillers solubles and grains. In fact, SOLULAC is so important to good feed lot results that Agricultural Colleges have investigated and recommended its use.* This means your customers will get more for their nutrient dollar . . . and more value from your feed—when you use SOLULAC . . . produced 12 months a year to assure you of a continuous supply.

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We are also enthused about the extra profits we are making from the sale of Honegger Farm Buildings, Big "H" Livestock and Poultry Equipment and Honegger Layers.
If you want to 'Join Up With A Leader' like we did, call Honeggers'.

Bernie Sherburn, Owner
Decatur Elevator Co.
Decatur, Mich.

with **HONEGGERS'**

BIG FRANCHISE

Write or call today

HONEGGERS'

FAIRBURY, ILLINOIS

Pilot Feeding Pens Help Firm In New Mexico Gain Customers

By Jess F. Blair
Feedstuffs Special Writer

E. B. Bullock & Sons Feed Co., Artesia, N.M., has cattle and hog feeding programs of its own which have proved to be an advantage in gaining new feed customers. The two brothers who are partners in the company — W. H. and C. K. Bullock —have found that their modern feeding pens a mile from their store provide practical examples of how good feeding practices can improve a prospective customer's hog or beef cattle feeding operation.

W. H. Bullock

"We've been feeding livestock for many years," said W. H. "This has proved advantageous in many ways. Perhaps the main thing is that we have learned quite a lot about feeding. And maybe this knowledge sort of rubs off when we talk to a farmer about feeding."

The Bullocks keep a minimum of 100 steers on feed, but the number may reach several hundred. The feed lots are located on an acreage at the edge of town which the Bullock family owns. Equipped with modern feeding devices and easily accessible by a paved road, it is a "show place" which many people visit.

In addition to the cattle, about 150 hogs are kept on feed most of the time. The owners have had success with their swine and cattle, but find the biggest benefits are derived from the encouragements that other feeders receive.

"We've worked out dozens of rations the last few years," said W. H. Bullock, "particularly with the various supplements put on the market. Our results are not kept secret but are available to everyone. If a certain ration doesn't work out, we want to know it first. If one does prove to be profitable, then we tell others about it, take them out to see the cattle and publicize the results in the newspapers."

Detailed Records Kept

The company keeps records on everything—from the weights of the cattle when put on feed to the exact amount of feed and kind fed each week. Cattle are weighed every month and are fed twice daily by store personnel, which is a time and money saver.

Another advantage to having their own feed lots, the Bullocks say, is that inferior feeds may be utilized. If they get in some grain which may be good feed but still not good enough to sell to customers, the partners use it for their own cattle or hogs.

"We do this quite often," said W. H. "We certainly don't want to sell grain with too high a moisture content or some weedy hay, so we feed it to cattle not on test."

Since there is so much interest in feedlot cattle in this area, the partners have started several feeding tests on the farms of customers. Some of this may stem from a friendly argument wherein a farmer thinks that his own plan of feeding is superior to that of the company. The Bullocks say that when both rations are tested, the results usually favor the feed company's ration.

"One of our best assets is the large platform scales which are used every day," said W. H. "We weigh cattle for customers and also use the scales to accommodate truckers of the area. We make a very small charge."

Since the partners have become so closely associated with cattle feeding in the area, they have a sideline of selling cattle. For instance, a rancher comes in and says he has 120 head of cattle to sell but doesn't have a buyer. One of the partners finds out the kind of cattle and location, then phones to find a buyer. Sometimes the sale is made without the feed company owners ever having seen the cattle.

"We don't get out and advertise this business much," said W. H., "but everyone knows it and business just comes in. Sometimes the commission amounts to quite a lot on large sales."

The Bullocks have one of the more diversified businesses in southeastern New Mexico. They own a cleaning plant for cleaning alfalfa and other seed and ship seed to several parts of the state. Many times the chaff left after seed cleaning can be used in their feedlots.

The Bullocks also have a modern feed mill and can make almost any kind of dairy, hog or range feed. In addition, they do custom mixing. And, since this is a very diversified farming area, most farmers raise some grain or hay on their irrigated farms. They keep livestock, too, so the alfalfa and maize are ground and mixed with a supplement at the Bullock feed mill.

"We encourage this type feeding," said W. H. "There might be more immediate profit in selling a complete feed, but the farmer can make more money by growing part of his feed and letting us formulate a good ration for him. If he doesn't make a profit on his hogs or cattle, then his feedlots may be empty the next year."

While there are no large feedlots in the area, several feeders are keeping from 50-200 head of cattle. The Bullocks have room for about 800. Whether or not they have the pens filled depends upon the market and the availability of cattle. This year the number is down because good feeder cattle are in short supply.

"We give our customers the advantage of knowing where cattle can be found," said W. H. "For instance, if we need cattle and some of our customers also need them, then we will divide those found. Our feedlots make us some profit, but not at the

(Turn to NEW MEXICO, page 68)

BAG CONVEYOR—W. H. Bullock, a partner in the New Mexico firm, calls this bag conveyor a great labor-saver. It is used in loading sacked feed and seed. In the picture, a truckload of seed is being loaded for shipment.

FEED BUILDING'S EXTERIOR—Shown is part of the E. B. Bullock & Sons Feed Co. building. The owners have sought to make more feed sales by testing the feed on their own cattle and keeping close records of results.

FEED FIRM'S FEEDLOT—This is part of the feedlots owned by W. H. and C. K. Bullock. The Bullock's feedlots have room for 800 head of cattle and several hundred hogs. The owners have used these feedlots in feeding tests to help sell their feeds to farmers and ranchers.

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Machine Said to Take Protein From Vegetable Matter

NEW YORK—After seven years of research and experiment, a British company says it is now operating a prototype machine for extracting protein from vegetable matter. The process, known as I.P.P. (impulse process protein) is claimed to be "eight times as efficient as nature's most expert counterpart, a grazing cow," according to an announcement by British Information Services, an agency of the British government.

In the I.P.P. process, nothing is wasted, according to the inventor. "The protein, for the first time fit for human consumption, and described as a colorless, tasteless fine powder, is suitable for sprinkling on or mixing with food," he said.

A small proportion of chlorophyll syrup containing all the carotene from the grass is also extracted. This is expected to have "great possibilities in the hands of the compounders as a concentrated feed, for poultry or livestock," the inventor said.

Use for Discarded Fiber

Even the discarded fiber, the goodness drained out of it, is usable for fuel, or in the paper-making or board manufacturing industries, according to the inventor.

In theory, "the process can tap with equal effect the protein in any vegetable matter — grass, lucerne, leaves, ferns, peanuts, alfalfa, even weeds," the inventor said.

"Most important is the economic potential of I.P.P. for undernourished people in underdeveloped areas where protein deficiency is a serious problem," he noted. The inventor estimates that it would cost "only about 2½¢ a week to provide one person with two ounces of the protein powder—all the protein needed to keep him in good physical condition."

The attempt to extract protein in bulk from leaf materials has been going on in Britain for more than a decade. The $84,000 prototype of the machine now working in London was designed by a British company, Glues & Chemicals, Ltd., London, under the direction of I. H. Chayen, himself an experienced farmer.

Central element of the design is the impulse renderer. This produces shock waves at the rate of 35,000 per minute through a stream of water carrying the vegetable matter.

Separation Process

In the I.P.P. process, leaf material and alkaline water are fed together into the machine. The fiber is then separated from the protein solution by means of a vibrating screen, the beaters in which move with a linear velocity of 22,000 ft. a minute. The fiber falls into a washing tank. Squeezed dry, it provides the raw material for paper or board-making.

Meanwhile, the protein solution has passed into a precipitation tank, and from there, into a high-speed centrifuge. After a further operation in a basket-type centrifuge, it arrives at a tank for separating solvents. From one end of this tank comes the pure protein; from the other the humanly unpalatable carotene material containing chlorophyll, hormones, sterols and vitamins.

"A somewhat different operation, using peanuts and water, produces, besides the protein, meal suitable for cattle food and various oils," said the inventor.

"Innumerable varieties of raw material can be treated by the process, but each variety has its own peculiarities involving modification of the machine, so that a great deal more research needs to be done to discover how best it can be used to provide food for human consumption from whatever vegetation is at hand in each particular area," he added.

Iowa Group Opposes Incentive Payments

DES MOINES, IOWA—The Iowa commerce commission has disclosed that it is opposing payment of $180 in incentive payments to three Franklin county farmers for storing 12,000 bu. corn with Lloyd Aldinger, Iowa Falls, grain storage operator.

The farmers, Robert, William and Luany Hamilton are suing for payment of 1½¢ bu. kickback on the storage fee.

Harold Hughes, commerce commissioner, said the grain storage operator advertised that he would pay 1½¢ bu. inducement for government corn storage, the inducement payable a year after delivery. In September, 1959, Waldo Wheeler, Iowa commerce commission counsel, issued a ruling saying such inducement payments by a bonded warehouse were illegal.

According to Mr. Hughes, Mr. Aldinger announced after this ruling that his agreement to pay inducements was illegal and could not be paid. The Hamiltons then filed suit in Hardin county district court.

Mr. Wheeler said any decision of the court in favor of the Hamiltons "would seriously impair the ability of the commerce commission to carry out its duty of general supervision of operation of bonded warehouses."

Grit Firm Formed

DENVER, COLO.—Colorado Granite Grit Corp. has filed articles of incorporation, listing $99,000 capitalization to carry on the business of quarrying and milling granite and manufacturing poultry grits and road building materials. Incorporators and directors are Hugh A. Bailey, M. R. Watters and C. M. Somerville. Other directors are C. C. Huston and Fred V. Bailey.

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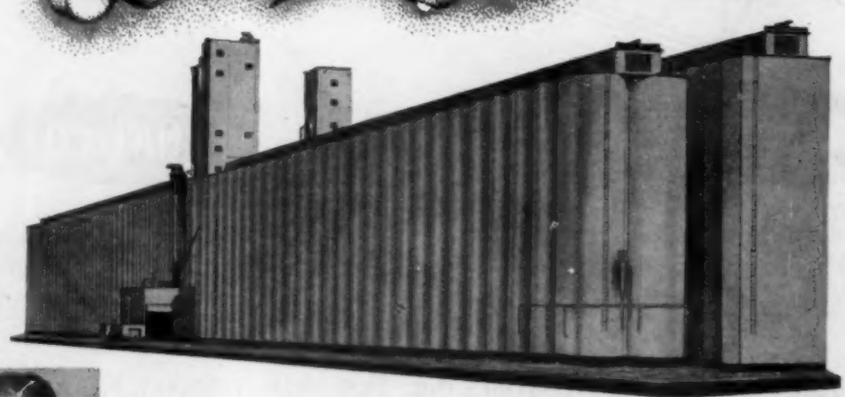

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"The Hot Spot Detector Temperature System and the Hot Spot Engineered Aeration System work as a team and are the answer to many of the grain man's problems. My Temperature System guards my elevators day and night and tells me when my grain is in danger by reporting any rise in temperature. Then I use my Aeration System to cool my grain and help control moisture, insects and mold. The Aeration also saves me lots of money by cutting the number of times I have to turn my grain. I wouldn't be without either my Hot Spot Temperature or Aeration Systems."

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Test Shows Rationed Light Ups Egg Yield

ELK RIVER, MINN.—Light "rationing" can induce hens to lay 14% more eggs, according to a test at the Nutrena Feeds research farm here.

Manfred F. Lawatsch, Nutrena poultry research specialist, said the 44-week-long experiment on two otherwise identical 400 bird flocks showed light-rationed hens laying 72 eggs for every 63 produced by birds lighted in a conventional poultry house manner.

"For years poultrymen have induced hens to produce more eggs by extending normal daylight hours with artificial light" Mr. Lawatsch said. "This test shows, however, that planned restriction of light is more desirable, for it matures birds at a slower, more favorable rate and substantially increases egg output."

The rationed birds received six hours of artificial light daily from 8 to 20 weeks of age, then were given an 18-minute increase weekly for the test's duration. The conventionally lighted birds received 12 hours daily from 8 to 20 weeks of age, and 14 hours daily during the laying period.

Mr. Lawatsch said the rationing schedule resulted in a gradual production increase that peaked more slowly but at a higher level than that of the conventionally lighted birds. By contrast, the conventional group peaked within five weeks, with many birds laying small, less profitable "pullet" eggs, then sloped into a decline.

There were no significant differences in mortality, percentage of softshelled eggs or pounds of feed consumed per dozen eggs produced, Mr. Lawatsch said. Birds in both flocks were 22 weeks old at the outset of lay and were confined in windowless houses.

Similar results have been experienced to date in a repeat of the test, he said.

GEAPS Convention Planned March 13-18

NEW ORLEANS—The 31st annual convention of the Grain Elevator & Processing Superintendents will be held here March 13-18.

Dean M. Clark, Chicago, secretary-treasurer, said plans are still being made for the meeting and that reservations should be made with the Jung Hotel, 1500 Canal St., New Orleans.

FEED FIRM BOUGHT

BLACKFOOT, IDAHO—J. R. Simplot Co. has purchased Stephens Grain & Feed Co., Inc., from L. E. Stephens, according to Frank Fullmer, Simplot manager. Purchase includes the elevator, which will be operated under the supervision of Mr. Fullmer. Melvin Olsen, elevator manager, will remain as manager of Simplot Feed & Grain Co., the name under which the firm will operate.

Egg Quality Control System Is Explained

URBANA, ILL.—A quality control system that maintains the highest possible quality in eggs from nest to consumer was explained by R. A. Dorsett, USDA marketing official, at the University of Illinois Agricultural Industries Forum.

This new quality egg program requires carefully controlled production, testing and handling under ideal conditions, he said. And, to make sure that all requirements are met, special testing devices and standards have been developed.

Mr. Dorsett said the process qualifies a case of eggs for the "Fresh Fancy Quality" grade label. The program employs a scientific method of determining interior egg quality. It replaces the old, laborious system of hand candling.

Government graders who carry out this program break a small representative sample of eggs from a flock. Then they measure the height of the egg white with a micrometer. A special "Haugh unit" indicates quality by classifying the eggs according to height of the white in relation to weight of the egg. Yolks are checked to see that they have no serious defects.

Eggs with spots, stains or defective shells are removed by flash candling, bulk candling or use of automatic electronic devices.

To qualify for the "Fresh Fancy" or AA Grade, eggs must meet these requirements:

- Eggs from each flock must be packed separately and identified. Hens in any flock must not vary more than 60 days in age.
- Eggs must be gathered frequently, cleaned properly and cooled promptly.
- A sample of eggs must meet certain rigid "Haugh unit" standards, and weekly tests must show a continued high-quality product.
- Eggs meeting the required standards are dated and must be sold within 10 days or less. After that time they cannot be sold with the "Fresh Fancy" grade label.
- Eggs that do not meet the standards for "Fresh Fancy" quality can be sold under the regular Grade A label if they meet the standards for this grade.

What happens if a farmer's eggs do not meet the "Fresh Fancy" quality standards? "He can sell them under the regular Grade A label if they meet the standards for this grade," Mr. Dorsett said. "But if they do not qualify for either 'Fresh Fancy' or Grade A, he is dropped from the program until his egg quality improves."

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Dillyn Grain and Supply
Dillyn, Kansas

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Easier to keep records now

Today, there's a simple, easy way to keep records. That's with CPA—Cyanamid Production Accounting. This unique system—first of its kind ever offered on a national scale—comes to you *free* through Cyanamid and your feed manufacturer.

What CPA is

Cyanamid Production Accounting is a folder which opens into a desk portfolio or wall chart. Two complete sets of records are included for all stages of hog production. These records, when filled out by you, give you a complete picture of (1) Cost of feed at all stages (2) Sow production (3) Cost per pig weaned (4) Dates and numbers of pigs started and finished (5) All costs in addition to feed (6) Net return.

How to get your CPA

If you have not requested your CPA—do so now through your feed manufacturer or feed dealer. Start getting the facts now—keep evaluating them—and act upon what they tell you. Your CPA is waiting for you at no cost!

This man kept records on Aureomycin

Mr. Wendell Peterson is a progressive hog producer living near Radcliffe, Iowa. He believes in records ... acts on what they tell him. Recently, Mr. Peterson had a chance to see how AUREOMYCIN® in feed cuts costs when fed at every stage of production.

Mr. Peterson kept records of an experiment conducted on his farm to determine the value of feeding AUREOMYCIN in a multi-stage program. This was one of 7 experiments conducted in Iowa involving 176 sows and their litters totaling 1523 pigs.

Here are the figures

26 sows and their litters were involved in the experiment. One group of sows and their litters received AUREOMYCIN in feed from start to finish. Another group received no AUREOMYCIN.

Result: One more pig was weaned from every two sows in the group fed AUREOMYCIN (at a level of 50 grams of AUREOMYCIN per ton of feed) up to 75 pounds—showed a 26% higher average daily gain and a 13% greater improvement in feed efficiency than the control group.

CPA is a 9" by 14" folder. It opens into a desk portfolio or wall chart. Pockets are provided for bills and receipts. Two complete sets of record sheets for all stages of hog production are included.

Mr. Pe... produci... Re... group c... MYCIN. at the ... feed. ... pounds group ... market... AUREOM... *turn ov... fed AUR... than th... AUREO...*

Talk to... Many ... similar ... with m... MYCIN. or feed ... AUREOM... ing, lac... finishin... free CP... mid Cor... New Y... *is Ame... tradem...*

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WHAT'S YOU... COST PER... PIG WEANE...

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Written records beat memory! *Seeing* in words and figures how you operate is essential to good management at *any* time—doubly so when hog prices dip low. Then you really must know *all* your costs—find ways to reduce or eliminate some of them—keep watching the ratio between outgo and income. CPA helps you do just that.

What is CPA?

Cyanamid Production Accounting is a 9" by 14" folder which opens for use as a desk portfolio or wall chart. Two complete sets of records are included for all stages of production. These record sheets, when filled out by you, *may give you many surprises!* They tell you facts about (1) Cost of feed at all stages (2) Production of each individual sow (3) Cost per pig weaned (4) Dates and numbers of pigs started and finished (5) A... in addition to feed (6... return.

Cyanamid Productio... counting keeps you posted... way—*lets you know wh... off and what doesn't.* H... ample: Records to guide... planning your next crop ... to show you ways to ... more hogs with the same... and labor, wean more ... litter at less cost—to pl... duction so that you se... higher market.

Your CPA is free

If you have not requeste... CPA from your feed ma... turer or feed dealer, do ... and let your record sheet... work for you. Start getti... facts now—keep evaluatin... —and act upon what they t... Your CPA is waiting for ... no cost!

CPA is a handy 9" by 14" folder. It opens into desk portfolio or wall... veterinary and miscellaneous bills and includes record sheets for post... sow production, dates and number of pigs started and finished, costs in...

HOW CPA AIDS YOUR HOG FEEDING PROGRAM

Feed manufacturers who provide their customers with CPA—Cyanamid Production Accounting—say this unique service shows advantages of using formula feeds.

Many thousands of hog producers have already started putting their CPA records to work. They're getting cost facts, evaluating them, acting upon them. More farmers will be doing the same thing as Cyanamid continues to promote CPA in advertisements like the ones shown.

Keeping accurate records is essential to good management at *any* time—doubly so as hog prices dip low. When you provide your customers with CPA you render a service that encourages a more efficient hog operation. You can point out to customers how the facts learned from CPA will *demonstrate* the economy and efficiency of your own feeding program with formula feeds. You'll build more good will, keep sales volume up at a time when hog raisers are most concerned about costs.

CPA is available to hog producers only through feed manufacturers and feed dealers. If you have not yet ordered your supply of CPA, get in touch with your Cyanamid representative who can tell you how to use CPA to your best advantage. American Cyanamid Company, Agricultural Division, New York 20, N. Y.

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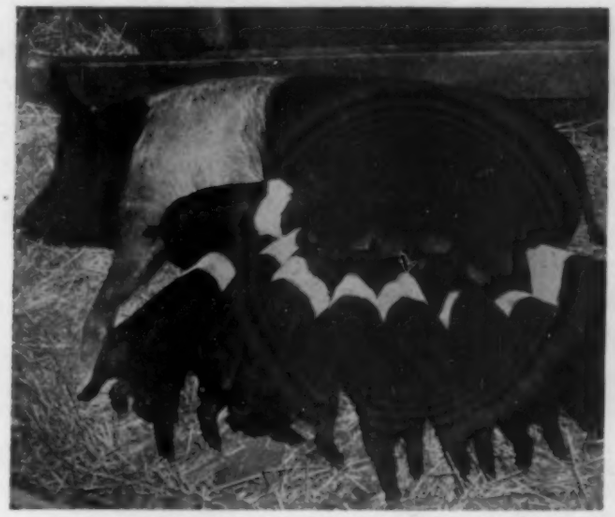
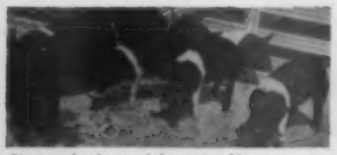
hart, has pockets for feed, g cost of feed at all stages, ddition to feed, net return.



Fed during the gestation, farrowing and lactation periods, AUREOMYCIN guards the health of sows and their litters. AUREOMYCIN, at recommended levels, also aids in eliminating the carrier stage of leptospirosis.



Starter pigs have minimum trouble with scours, stresses and "subclinical" diseases when fed AUREOMYCIN. They don't waste feed fighting disease—but use it to put on gains. You save and wean more pigs ... and that reduces cost per pig.

Growing-finishing hogs on feed containing AUREOMYCIN are protected all the way against atrophic rhinitis and cervical (jowl) abscesses. They use feed more efficiently during period when feed costs are highest. Result: maximum gains, at minimum cost. And hogs finish earlier.

How Aureomycin cuts costs, too

You may use CPA successfully, even if you don't have AUREOMYCIN® in your hog feeds. But many farmers who have kept similar records have proved to themselves that AUREOMYCIN is a big, cost-reducing factor in their programs.

These farmers paid a small extra amount to have AUREOMYCIN in feeds yet *found that this antibiotic far more than paid for itself in reducing costs at every stage of production.*

Recent controlled experiments on 7 farms in Iowa (involving 176 sows and their litters totaling 1523 pigs) revealed remarkable results when AUREOMYCIN was fed in a multi-stage program—from sow through starter and growing pig to finishing hog. These experiments showed that AUREOMYCIN helped save more pigs, wean more pigs, get more pigs to market on less feed—and returned $3.65 for every $1 invested in AUREOMYCIN.

Multi-stage program starts with the sow

AUREOMYCIN fed to sows during gestation and lactation helps maintain their health and the health of their litters. Because you raise more pigs to weaning, you reduce your cost per pig. Feeding AUREOMYCIN, at recommended levels to breeding stock, also aids in eliminating the carrier stage of *leptospirosis*.

2nd stage: saving young pigs

Every pig saved is a cost reduced. That's why you continue cutting costs by putting your young pigs on starter feeds containing AUREOMYCIN. AUREOMYCIN provides extra protection against scouring, stresses and invisible sub-clinical diseases that use up feed energy. You save more pigs, have more uniform pigs and fewer runts. Your pigs put on as much as a pound a day right up to weaning.

3rd stage: less cost per pound of gain

AUREOMYCIN keeps your growing pigs gaining fast at less cost per pound of gain. How? By guarding against infectious enteritis and atrophic rhinitis and by controlling unseen, sub-clinical diseases. Pigs don't *waste* feed fighting disease—they use it to stay healthy and put on maximum gains. You save feed, time and labor—and reduce medication bills.

4th stage: save on feed when it costs most

Finishing hogs eat *most* and your feed costs are *highest*. To keep your costs down, hogs must use their feed *efficiently* to put on top gains. When you continue to feed AUREOMYCIN all the way through you can expect all these advantages: (1) Up to 40 pounds of feed saved in the finishing stage alone (2) Continued protection against sub-clinical diseases and clinical diseases such as jowl abscesses (3) Vigorous, uniform, better-appearing hogs ready for market 2 to 3 weeks earlier.

Talk to your feed manufacturer

Many feed manufacturers and feed dealers offer feeds containing AUREOMYCIN for a multi-stage program—gestation, farrowing, lactation, starting, growing and finishing. See your feed man and get details. And ask him for your free CPA record. American Cyanamid Company, Agricultural Division, New York 20, N.Y.

®AUREOMYCIN is American Cyanamid Company's trademark for chlortetracycline.

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CYANAMID SERVES THE MAN WHO MAKES A BUSINESS OF AGRICULTURE

Electronics Used In Farm Planning

BIRMINGHAM, ALA.—A southern farm magazine announces that it is applying "space-age electronics" to problems of agriculture. The idea is to help farmers become better agri-businessmen, and should help them do a better feeding job.

"Precision Farm Planning," developed on five selected southern farms by editors of The Progressive Farmer and agricultural consultants, is offered to farmers as a blueprint for profitable management in the magazine's February issue.

"A special four-page insert makes electronically - calculated precision farm planning available to family-size farm operators on a regional basis," the magazine said.

The magazine editors teamed up with specialists from Doane Agricultural Service, national farm management agency, to form "Task Force 60." They studied and analyzed prices, yields, soil fertility, climate, financial resources, equipment, manpower and other factors on farms selected throughout five southern regions.

Data was fed into electronic processing machines. Their calculations furnished blueprints for farming—"the best possible that can be developed today," declares The Progressive Farmer.

In each of its five separate regional editions, the magazine presents in detail the plan for the typical farm in that area. The plan includes a projection of expected prices for key farm products.

At the close of each farm plan, tables are given for the use of other farmers in the region. Income opportunities from crop and livestock programs are listed. Units of land, labor and capital needed to make $1,000 profit from producing individual types of crops and livestock—such as corn, soybeans, cotton . . . cattle, sheep or hogs—also are listed. This allows other farmers to apply these unit factors to large or small farm operations which they have now or may have in the future. From these tables, farmers can draw up their own farm plans.

The James A. Pulliam farm in the Delta country of Arkansas, for example, was selected as representative of agriculture in that region. According to calculations, cotton, at 30¢ lb., will return more profit from each unit of land, labor and capital than any other crop or livestock produced on the farm. Ultimately, however—based on final calculations of the electronic brain, which considered acreage allotments and all other factors—a cotton-corn-hogs-cattle combination was recommended. With this combination, Mr. Pulliam will realize maximum long-range profit potential from available land and resources, according to The Progressive Farmer.

Eugene Butler, Texas editor and president of The Progressive Farmer Co., called "Precision Farm Planning" a "major breakthrough toward efficiency that southern farmers can use for greater profits."

Research Unit Issues Publications on Swine Nutrition, Hormones

WASHINGTON—A revision of an original report on nutrient requirements of swine and a supplement to a report on hormonal relationships are now available from the National Academy of Sciences-National Research Council.

The publication on nutrient requirements of swine is the 1959 revision of the original report entitled "Recommended Nutrient Allowances for Swine," prepared by the sub-committee on swine nutrition of the Agricultural Board, and is one of the current series on Nutrient Requirements of Domestic Animals. The original report was published in 1944 and subsequent revisions were made in 1950 and 1953.

Information on nutritional requirements of swine accumulated since 1953 and new discoveries influencing nutritional needs of swine appear in this publication. Specific areas discussed are proteins, amino acids, fats, minerals, vitamins and antibiotics.

Tables of feed composition are no longer included in this series on nutrient requirements of domestic animals since they are available in Academy-Research Council Publication 659—"Joint United States-Canadian Tables of Feed Composition," which is available at $2.

The "Hormonal Relationships and Applications in the Production of Meats, Milk and Eggs" supplement is a continuation of Publication 266, "Hormonal Relationships and Applications in the Production of Meats, Milk and Eggs," first published in 1953. The present supplement covers literature published from 1952-1957.

"Research has brought forth many new facts relative to hormone uses in animal production," the council notes. "Some of the uses which looked quite promising a few years ago now seem less promising, in certain instances. These changes are brought to the attention of the reader in this report."

Topics discussed in this supplement include the use of thyroprotein and goitrogens; pituitary hormones in growth and lactation (not treated in earlier report), and estrogens, androgens and progestrogens relative to growth, fattening, lactation and production. A summary of federal regulations on the use of hormonal material is appended.

Cost of the revision on Nutrient Requirements of Swine is $1. Copies of "Hormonal Relationships and Applications in the Production of Meats, Milk and Eggs," Publication 266 (1953) may be obtained for $1.25 each. The supplement, Publication 714 (1959), may be obtained for $2.

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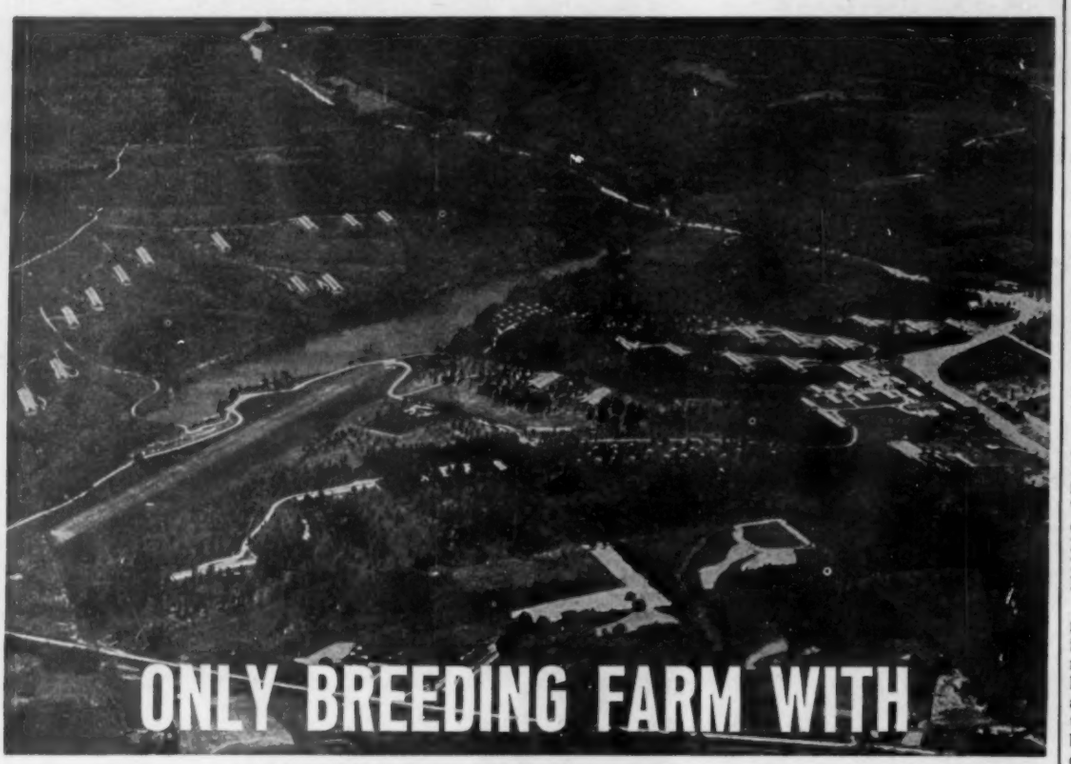

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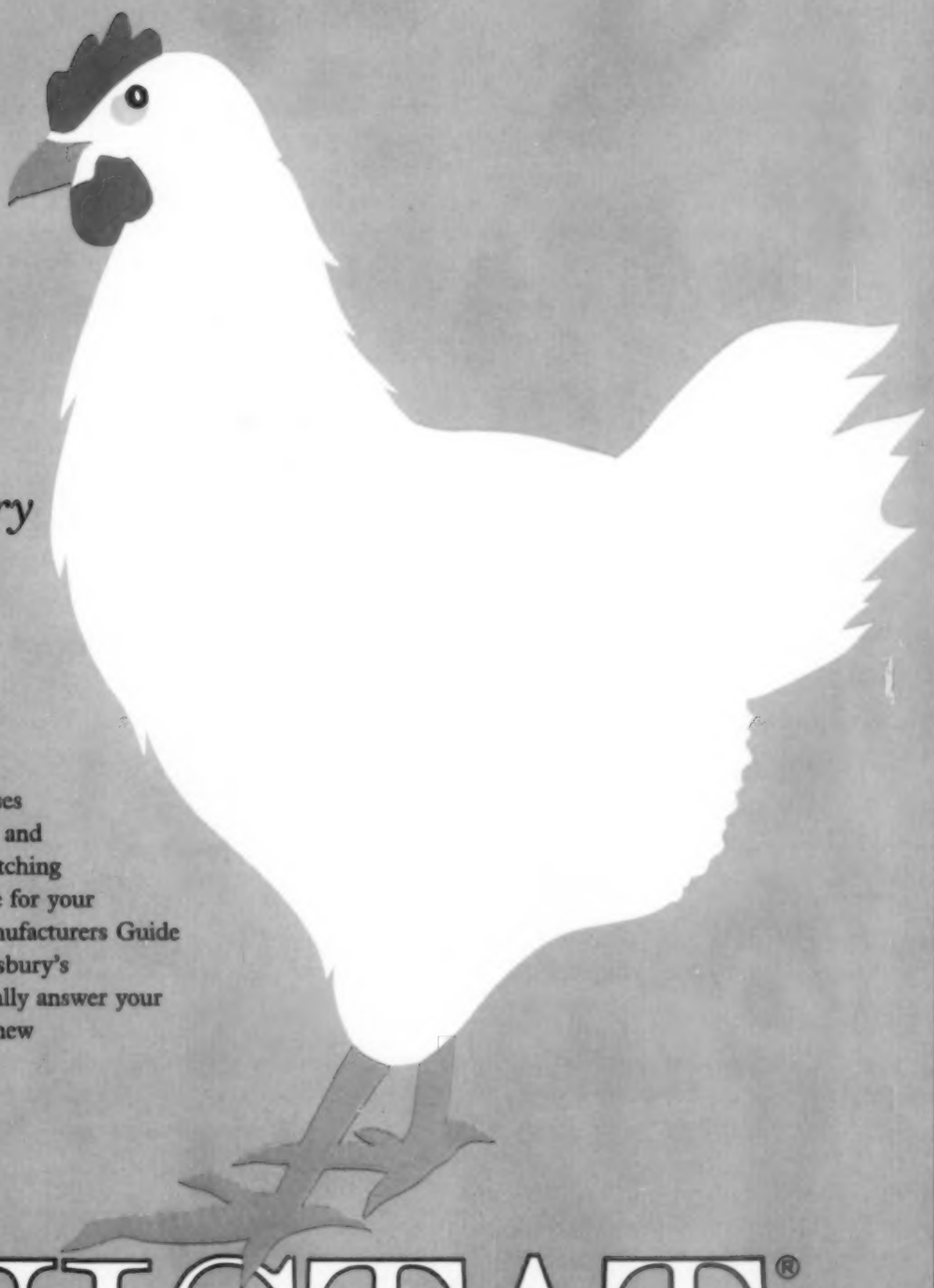

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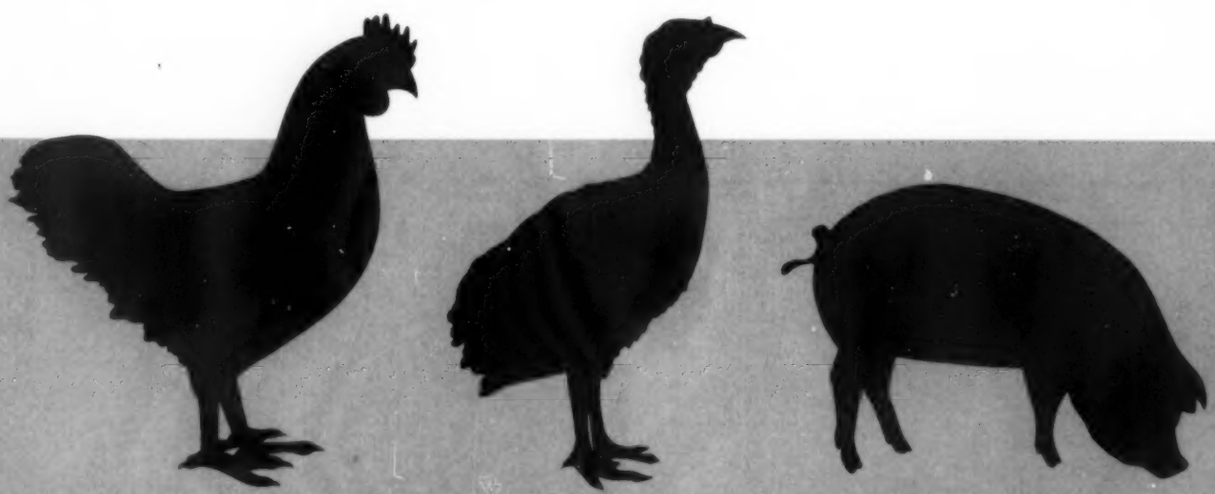

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1. Select high-quality, disease-free livestock and birds. The best of feeds is no substitute for good breeding. And the end result (eggs or meat) is seldom any better than the genetic characteristics of the birds or animals growers start with.
2. Care for young animals or birds properly. This includes vaccination and all other such preventive measures. The grower who markets 99 broilers or turkeys out of a hundred takes every precaution during those critical first few weeks.
3. Practice good housekeeping throughout the year or life cycle of the animals or birds involved. This includes adequate housing, watering, heating, ventilation. It also means a strict sanitation program, clean pastures, and litter.
4. Give continuous attention to birds' and animals' nutrition so as to provide optimum disease prevention and growth stimulation. The most successful growers are those who reinforce good management with a sound feed additive medication program.
5. Observe flocks and herds daily, so as to detect health problems before they reach the epidemic stage. Nowhere else is timeliness any more important than in the field of health. Growers should isolate sick birds or animals immediately.
6. When trouble breaks out, get an accurate diagnosis at once. If prompt diagnostic service is not available, contact the Dr. Salsbury dealer and ask him for help in identifying the malady.
7. Treat sick birds or animals promptly. Use a reliable recommended treatment in accordance with the diagnosis of the condition.

We, here at Dr. Salsbury's Laboratories, gladly subscribe to the above management rules. They will, if followed faithfully, repay the grower many times over through lower disease loss and higher profits. In support of this belief, the ads we write for grower publications have been carrying the following message (or words to this effect):

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MONTANA CONFERENCE—Guest speakers and officials of the Montana Nutrition Conference at Montana State College, Bozeman, are shown in these three pictures. Left to right in the first photo are: Dr. Ralph Soule, Farmers Union Grain Terminal Assn., St. Paul; Dr. C. F. Petersen, University of Idaho, and Dr. W. E. Dinusson, North Dakota Agricultural College. In the second picture are: Dr. R. M. Jordan, University of Minnesota; Dr. A. L. Neumann, University of Illinois, and Dr. R. C. Klussendorf, Commercial Solvents Corp., Terre Haute, Ind. The third photo shows Dr. J. A. Asleson, associate director of the Montana Experiment Station; Dr. O. O. Thomas of Montana State, the conference chairman, and Prof. J. L. Van Horn of Montana State.

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Evaluation of the Proposed ANRC Vitamin A Reference Standard

By Dr. Stanley R. Ames
Distillation Products Industries

EDITOR'S NOTE: This is another in a series of papers from the annual meeting of the Animal Nutrition Research Council. The paper was one of a number dealing with evaluation of the proposed ANRC vitamin A reference standard. It was prepared by Dr. Stanley R. Ames of the research laboratories of Distillation Products Industries, division of Eastman Kodak Co., Rochester, N.Y. Other articles in the series being published in Feedstuffs have been on vitamin K and vitamin E.

The composition of the proposed ANRC vitamin A reference standard has been described earlier. Following the directions sent to collaborators evaluating the proposed standard, it was tested for shelf-life, stability in feeds and for its biological response in oral-supplementation liver-storage bioassays using chicks and in diet-supplementation liver-storage bioassays using chicks.

STABILITY—An ANRC standard should have good stability, both when stored by itself and on storage when mixed in poultry feeds. Samples of the proposed ANRC vitamin A reference standard, batch 1, were stored in brown bottles at room temperature and samples removed periodically for assay. The USP XV assay (1) was used as the primary criterion of potency. In Table 1 are given the values obtained on the proposed ANRC vitamin A reference standard, batch 1, at six-week intervals, for approximately five months. An unexplained anomaly was observed on the second analysis. The preparation appeared to lose approximately 5% of its USP XV potency, but, thereafter, was completely stable. While a drop of 5% in potency is not desirable, the stability thereafter is indicative of an inherently stable material.

The proposed ANRC vitamin A reference standard, batch 1 was mixed in a modified ANRC reference chick diet and its stability compared with a number of other sources of vitamin A. The feeds were assayed after mixing and after storage for six weeks at 72° F. The AOAC chemical assay procedure (2) was employed as modified by Tinkler, et al. (3) for the use of large samples.

The results, summarized in Table 2, indicate excellent stability in poultry feed, for the proposed ANRC vitamin A reference standard. Over a six-week period, it lost approximately .6% of its potency. A commercially-available gelatin-stabilized dry vitamin A was approximately as stable as the ANRC standard. Three other vitamin A sources tested, a fat-stabilized dry vitamin A, all-trans-vitamin A palmitate in oil, and fish liver oil showed greater losses in potency during the storage period, ranging from 4.8 to 5.8%. In this test, the proposed ANRC vitamin A reference standard exhibited excellent stability, which would be quite adequate for diet-supplementation bioassays.

ORAL - SUPPLEMENTATION LIVER-STORAGE BIOASSAYS—The proposed ANRC vitamin A reference standard, batch 1, was examined by the oral-supplementation liver-storage bioassay, using chicks, as outlined by Ames, et al. (4). This procedure has been described (5), in part, as a modification of the slope-ratio liver-storage rat bioassay for vitamin A of Ames and Harris (6). The livers were analyzed, as described by Ames, Risley and Harris (7), by grinding with anhydrous sodium sulfate, extracting with diethyl ether and testing an aliquot for its antimony trichloride blue-color activity. Large single doses of vitamin A were administered per chick and after 48 hours, the mean liver-storage of vitamin A, expressed in terms of units/liver, was determined.

The data in Table 3 show that the proposed ANRC vitamin A reference standard showed 60.6% liver-storage of the ingested dose. For comparative purposes, it was assigned a relative biopotency of 100%. Three other sources of all-trans-vitamin A, namely the USP vitamin A reference solution, all-trans-vitamin A palmitate in oil, and a commercially-available gelatin-stabilized dry vitamin A, showed comparable relative biopotencies. Two of the vitamin A sources tested, a fat-stabilized dry vitamin A and fish-liver oil, showed much lower liver-storages with relative biopotencies of 68% and 53% respectively. Both of these latter vitamin A sources had maleic values greater than 30, indicating a substantial amount of isomers other than all-trans-vitamin A. A procedure has been described by Ames and Lehman (8) for estimating the relative biopotency from the maleic value. Using this procedure, one would predict the relative biopotencies of these two products to be about 65-70%.

The results indicate excellent agree-

TABLE 1. Storage at Room Temperature

(Means of Duplicate Assays)

Date	Unsap. E (1%, 1 cm.) 325 mμ	Morton & Stubbs factor	Unsap. blue color u/g	USP XV potency u/g
5/5/59	5.06	.998	9,490	9,258
6/23/59	5.07	1.010	8,530	9,288
8/4/59	4.78	.991	8,670	8,758
9/15/59	4.84	.972	8,600	8,860
9/29/59	4.80	.990	8,500	8,778
10/7/59	4.80	.981	8,610	8,788

TABLE 2. Stability in Poultry Feed After 6 Weeks at 72° F.

(Means of Duplicate Assays)

Source of vitamin A	Chemical assays (units/lb.) Zero time	6 Wk. storage	—Loss in potency— u/lb.	%
Proposed ANRC Reference Standard—Batch 1	25,000	24,840	160	.6
Gelatin-stabilized dry vitamin A	24,670	24,390	280	1.1
Fat-stabilized dry vitamin A	26,800	25,520	1,280	4.8
All-trans-vitamin A Palmitate in oil	26,170	24,660	1,510	5.8
Fish liver oil	25,260	23,960	1,300	5.1

TABLE 3. Relative Biopotencies in Oral-Supplementation Liver-Storage Bioassay Using Chicks

Source of vitamin A	Units fed	Mean liver storage* u/liver	Liver-storage per cent of ingested dose %	Relative biopotency %
Proposed ANRC Reference	998	573		
Standard, Batch 1	1,999	1,274	60.6	(100)
USP vitamin A reference	1,003	553		
Solution	2,006	1,218	57.9	95.5
All-trans-vitamin A	1,043	673		
Palmitate in oil	2,075	1,186	58.9	97.2
Gelatin-stabilized	1,010	565		
Dry vitamin A	1,995	1,210	58.3	96.2
Fat-stabilized dry	1,103	416		
Vitamin A	2,212	986	41.2	68.0
Fish liver oil	1,013	344		
	2,026	616	32.2	53.1

*Experimental groups consisted of 10 chicks each. The mean liver storage in the negative group was 21 units/liver. All mean liver storage values have been corrected.

ment with the fat-stabilized dry vitamin A. The fish liver oil apparently contained some extraneous blue-color reacting material, in addition to substantial amounts of vitamin A isomers of low biological potency. The results of the oral-supplementation chick liver-storage bioassay for vitamin A indicated that the proposed ANRC reference standard, batch 1, was fully available biologically and compared favorably with other preparations of all-trans-vitamin A.

DIET-SUPPLEMENTATION LIVER-STORAGE BIOASSAYS—Several sources of vitamin A, including the proposed ANRC vitamin A reference standard, batch 1, were compared in two diet-supplementation liver-storage bioassays, as outlined by Ames, Swanson and Harris (9). In this procedure, diets supplemented with vitamin A at levels of about 25,000 units/lb. were fed to partially depleted chicks for five days. Basal diet was then fed for one day, the livers were removed and analyzed as described earlier (7). The diets were analyzed for their chemical potencies, by the procedures described earlier (2,3). From food consumption data the units of vitamin A ingested were calculated. The mean liver-storage in units/liver having been determined, the biopotency in units/lb. was calculated using the proposed ANRC reference standard, batch 1, as the standard in the bioassay. The relative biopotency is the biopotency divided by the chemical assay.

The first diet-supplementation liver-storage bioassay (see Table 4) was on freshly-mixed diets. In this experiment, a commercially-available gelatin-stabilized dry vitamin A showed a high relative biopotency, whereas all-trans-vitamin A palmitate in oil showed a relative biopotency of about 82%. The fat-stabilized dry vitamin A and fish liver oil, both exhibiting high maleic values showed low relative biological potencies (66 and 60%), in agreement with the results of the oral-supplementation liver-storage bioassay.

The same diets were then stored for six weeks at 72° F. and again were bioassayed by the diet-supplementation liver-storage procedure (Table 5). Employing an alternate method of calculation, the percent liver-storage of the ingested dose of vitamin A is determined directly. The gelatin-stabilized dry vitamin A again showed a relative biopotency comparable to that of the proposed ANRC reference standard. The activity of all-trans-vitamin A palmitate in oil was lower (78%) and the two other vitamin A sources showed low relative biopotencies (52 and 48%). Excellent correspondence was observed with the ANRC reference standard in a freshly-mixed batch of feed.

The results of the diet-supplementation liver-storage bioassays show excellent stability for the proposed ANRC vitamin A reference standard, batch 1, when mixed in diets and reflect a superiority of the proposed standard over oil solutions of vitamin A or preparations containing fish liver oil.

COMPARISONS OF BIOASSAY

TABLE 4. Relative Biopotencies in Diet-Supplementation Liver-Storage Bioassay Using Chicks

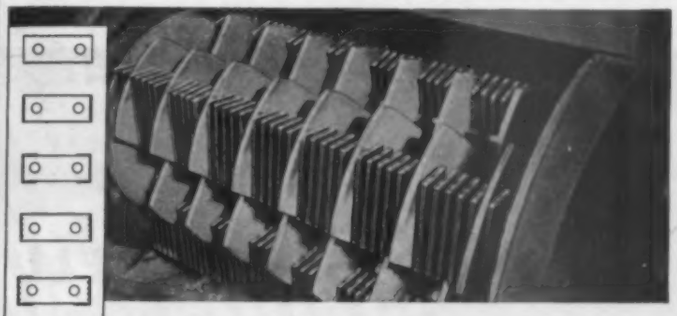
Source of vitamin A	Feed consumption lb.	Vitamin A ingested u.	Mean liver storage u/liver	Biopotency u/lb.	Chemical assay u/lb.	Relative biopotency %
Proposed ANRC Ref. Std.—Batch 1	.2070	5,208	3,080	(25,000)	(25,000)	(100)
All-trans-vitamin A palmitate in oil	.2024	5,296	2,591	21,510	26,170	82.2
Gelatin-stabilized dry vitamin A	.2057	5,074	3,230	26,380	24,670	107.0
Fat-stabilized dry vitamin A	.2030	5,441	2,132	17,650	26,880	65.9
Fish liver oil	.2161	5,459	1,944	15,120	25,260	59.9

Experimental groups consisted of 12 chicks each. The liver lipids from the negative control group showed no blue color.

TABLE 5. Relative Biopotencies in Diet-Supplementation Liver-Storage Bioassay Using Chicks

Source of vitamin A	Following Six Weeks' Storage at 72° F. Food consumption lb.	Vitamin A ingested u.	Mean liver storage u/liver	per cent of ingested dose %	Relative biopotency %
Proposed ANRC Ref. Std.—Batch 1	.2117	5,293	3,123	59.0	(100)
All-trans-vitamin A Palmitate in oil	.2143	5,285	2,439	46.1	78.3
Gelatin-stabilized dry vitamin A	.2156	5,258	3,043	57.9	98.1
Fat-stabilized dry vitamin A	.1982	5,058	1,552	30.7	52.0
Fish liver oil	.2121	5,002	1,432	28.2	47.8
Proposed ANRC Ref. Std. Batch 1 (freshly mixed)	.2039	4,469	2,723	58.6	99.3

Experimental groups consisted of 12 chicks each. The liver lipids from the negative control group showed no blue color.



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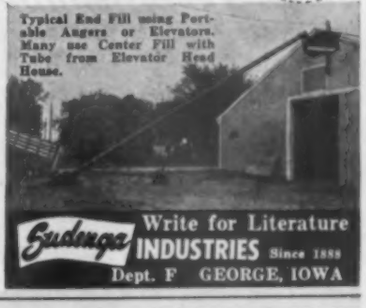

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TABLE 6. Comparison of Proposed ANRC Vitamin A Reference Standard and USP Vitamin A Reference Solution in Chick Liver-Storage Bioassays

Type of standard	Units ingested	Mean liver storage u/liver	Liver-storage per cent of ingested dose
Oral-supplementation bioassays			
ANRC	987	548	
	1,986	1,253	59.4
USP	943	523	
	1,923	1,167	58.0
ANRC	998	573	
	1,999	1,274	60.6
USP	1,003	553	
	2,006	1,218	57.9
Diet-supplementation bioassays			
ANRC	5,208	3,080	59.8
ANRC	5,293	3,123	59.0
ANRC	4,649	2,723	58.6

PROCEDURES—A direct comparison of oral-supplementation and diet-supplementation procedures is summarized in Table 6. The USP vitamin A reference solution and the proposed ANRC vitamin A reference standard, batch 1, were compared directly in two oral-supplementation bioassays. Excellent correspondence is shown as indicated by the similarity in the percent liver-storage of the ingested dose. Excellent agreement between the two bioassays was likewise observed. The proposed ANRC vitamin A reference standard was tested in three diet-supplementation bioassays. The percent liver-storage of the ingested dose again averaged about 59%, showing excellent correspondence with the results of the oral-supplementation procedure. These results also indicate that the proposed ANRC vitamin A reference standard, batch 1, has excellent stability and excellent availability to chicks.

SUMMARY—The proposed ANRC vitamin A reference standard, batch 1, meets the criteria established for an ANRC reference standard in all respects. The vitamin A is of high purity. It can be easily analyzed by chemical procedures. It is reasonably stable when mixed in feeds. It can be obtained easily in the necessary quantities. Since it consists of all-trans-vitamin A, it has a known content of biologically-active isomers. It corresponds very well with the present USP vitamin A reference solution. Its full biological availability has been demonstrated by bioassay procedures. Since the proposed ANRC vitamin A reference standard meets the criteria established from ANRC reference standards, its adoption as the ANRC vitamin A reference standard is recommended.

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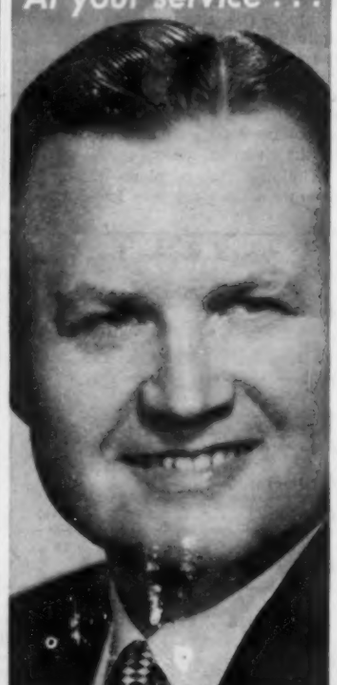

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Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.

Insoluble Grit for Chickens

● D. C. Kennard and V. D. Chamberlin, Ohio Agricultural Experiment Station, Wooster, Ohio; Research Bulletin 848, December, 1959.

ABSTRACT

This work represents a series of experiments over a period of years to evaluate various aspects of grit feeding to chickens of various ages. In all, 16 experiments involving a total of 5,050 growing chicks 8-12 weeks; 8 experiments with 1,700 chickens after the first 6-8 weeks, and 12 experiments with a total of 1,545 layers were conducted. The report of the results represents one of the most complete reports of this nature ever assembled from any one experimental group and is presented in three sections as follows:

Section I—Growth of chickens
A. During first 8-12 weeks
B. After first 6-8 weeks
Section II—Gizzards as affected by insoluble grit, coarse feed and finely ground feed.
Section III—Egg production.

Growth of Chickens: 8-12 Weeks— The Ohio experiments concerned with growth of chickens were conducted over several years (1953 to 1959) with a large total number of birds kept under practical management conditions. The experiments were started with groups of 150 to 200 day-old chicks in continuous brooder house pens with concrete floors covered with wood shavings. The grit rations included 5% chick size granite grit mixed with the all-mash feed. This was done because it had been previously observed that individual birds and even different flocks, especially of young chickens, differed greatly in their intake of insoluble grit when offered on a free-choice basis. The grit was considered as extraneous material and was not included in the feed consumption data.

During the first 8-12 weeks the starter ration was either coarsely ground all-mash or the same mash finely ground. The coarsely ground all-mash included coarsely ground corn (with particles up to the size of

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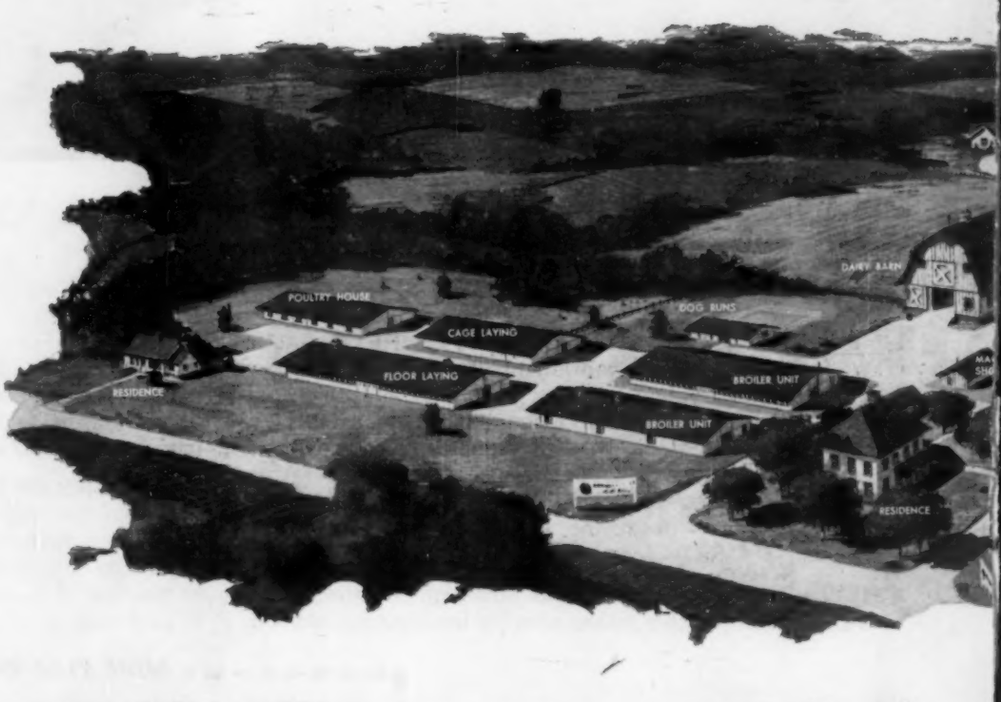

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wheat kernels), expeller process soybean oil meal and wheat bran, all of which were mainly responsible for its coarseness—totaling about 60% of the total mash.

The over-all average results of the 11 experiments conducted in which the birds received coarse feed with and without granite grit showed that in the six experiments conducted with White Leghorns (five with pullets, one with cockerels) little difference could be shown with respect to weight per bird or feed per pound of live weight for those birds receiving grit and those that did not.

Although the average of the five experiments with Rhode Island Reds also showed little difference with respect to weights or feed conversion, it is interesting to note that in three of the trials, the results favored the grit-fed birds for best growth, with the other two trials favoring the non-grit fed birds. The averages for the 11 trials were weights of 1.69 and 1.70 for birds with and without grit, respectively. Correspondingly, the feed conversions were 3.73 and 3.61, respectively. Better feed utilization was secured without grit in 8 of the 11 trials.

In five experiments in which the birds received finely ground feed with and without granite grit during the first 10 to 12 weeks the results showed an average weight of 1.83 and 1.82 lb., respectively, for the 5% granite grit fed birds and no grit fed birds. The corresponding feed conversions were: 3.52 and 3.57.

Growth of Chickens: After first 6-8 weeks—Attention was given to this phase of the growing period of chickens by the Ohio group because relatively little work had been conducted by other researchers concerning the grit requirement of chickens during this period of growth. One of the reasons for this was most chickens were formerly transferred to range after the brooding period where ample grit, etc., were usually available. With modern methods of raising replacement birds, etc., in confinement being adopted in many sections it seemed wise to re-examine the question of grit during later growth.

The experiments conducted with growth of chickens as affected by the feed with (5%) and without granite grit after the first 6-8 weeks were started with day-old chicks and continued in the same brooder pens during the later period of growth. The only difference in procedure from previously reported trials (growth to 10-12 weeks of age) was the use of medium size granite grit, with the ration reduced to 16.5% protein and the use of whole corn (25%) and oats (20%) after 6-8 weeks of age.

The averaged results of the five experiments conducted with the growth of chickens that received coarse feed with and without granite grit after the starting period and the three experiments in which the chickens received finely ground feed with and without grit showed that although the weight of the birds varied in different trials, little difference was shown in the averaged results, either with respect to growth or feed conversion. One trial did show a positive response for the addition of grit, but it is pointed out in the bulletin that averaged results of repeated experiments provide a more reliable answer to supplementation with grit, and that the response apparently secured with grit in the one trial was probably due to other factors.

Gizzards as Affected by Insoluble Grit, Coarse Feed and Finely Ground Feed—The different groups of White Leghorns from which the gizzards were taken, were started as day-old chicks in battery brooders and continued in batteries until completion of the experiments. Gizzards were taken from representative pullets of each group at 20 weeks of age when ready to lay. The remaining ones were transferred to individual laying batteries where they were continued as layers. After the laying period (38 weeks or 54 weeks) gizzards were taken from representative birds, after being fasted 24 hrs. Up to 20 weeks of age the birds were fed similar rations to those fed in the trials involving growth of chickens after first 6-8 weeks. After 20 weeks of age, they were fed a whole-grain (20% whole corn, 20% whole oats) mash ration. Granite grit (medium sized) was fed as 5% of the feed mixture to those receiving grit, with calcium supplement mixed at the 5% level in the feed. A total of 288 gizzards were examined.

The feed texture and/or granite grit definitely affected the weight of the gizzards. The smallest gizzards were from birds which received finely ground feed without grit. The weight of the gizzards was increased an average of 15% when the birds receiving finely ground feed were also supplied with 5% grit in the feed. Coarse feed both with and without grit had a similar effect. Heaviest gizzards were from pullets receiving both coarse feed and granite grit.

The gizzard linings were also affected by the feed texture and/or granite grit with those lightest in weight from birds on finely ground feed with no grit. The addition of grit to finely ground feed, and use of coarse feed with and without grit, all increased the weight of gizzard linings.

It is also interesting to note that the study of 53 gizzards from pullets showed that the amount of external fatty tissue adhering to the gizzard was about twice as great for those birds only receiving finely ground feed as the larger gizzards from birds that received coarse feed or grit.

Egg Production—The experiments with layers were conducted with groups of 45-50 trapnested birds confined indoors in floor pens with wood shavings. The pullet layers were raised on range and had access to

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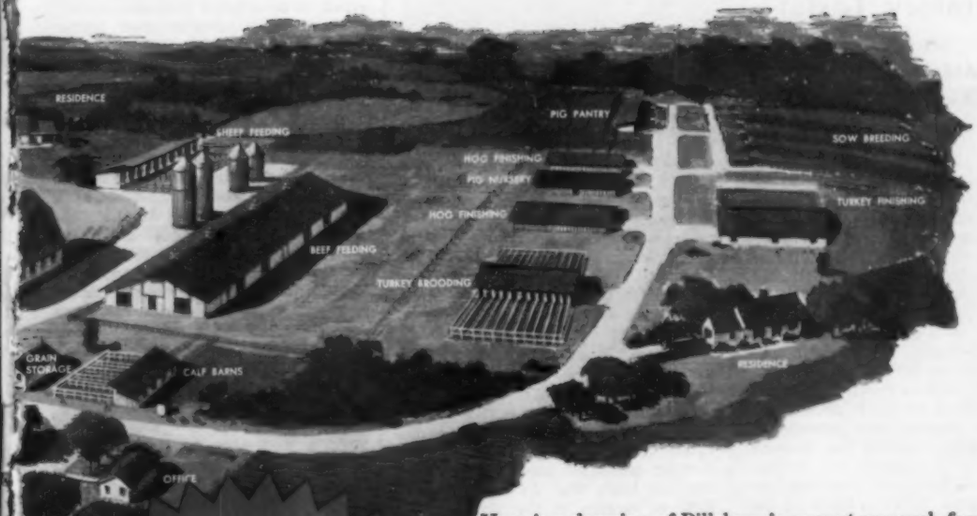

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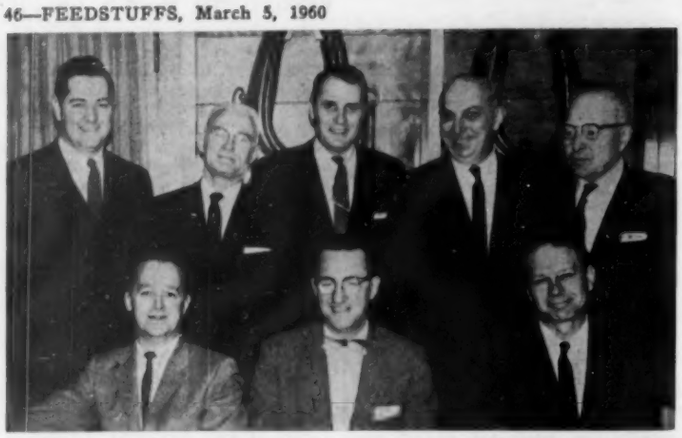

SALES CONFERENCE—Animal and poultry feed department managers of Wilson & Co. plants in the Midwest met recently for a one-day sales conference in Chicago at the Prudential Building headquarters and at the research and technical division laboratory. Shown (left to right) at a luncheon at the Stockyards Inn are: Back row—Al Russell, Union Bag Co., Chicago; Miles Been, Oklahoma City; Andy Dudley, Kansas City; Rudy Tomasek, Omaha, and Russ Ward, Chicago. Front row: Jack Henry, Chicago; George Coontz, Cedar Rapids, Iowa, and Glen Ives, Albert Lea, Minn.

insoluble grit previous to housing and the beginning of the trials. During the experiments the calcium supplement and insoluble grit (when fed) were kept before the birds at all times in separate feeders. Two different rations were used in the experiments. The first was described above under the discussion of the work with gizzards, while the second contained no whole corn, but did contain 20% whole oats.

The averaged results of the three experiments with coarse feed and the free choice of calcite grit with and without granite grit clearly indicate the need of insoluble grit to supplement calcite grit both for better egg production and feed utilization. Also, the experiments with oyster shell indicated improved egg production and feed utilization when oyster shell was supplemented with insoluble grit.

On the other hand, two experiments with finely ground feed showed little or no advantage from the use of ganite grit.

Results of four experiments in which layers received coarse feed and free choice oyster shell with and without granite or silica (gravel) grit showed that better egg production and feed utilization were obtained from the layers which received the insoluble (gravel) grit, with one exception, in which a slightly negative response was received for those birds on granite grit.

It is somewhat interesting to observe that the intake of the more permanent type of grit (shatterless gravel grit) was but one fourth of the granite grit, and that in every instance the best egg production and feed utilization were secured from the birds receiving the crushed gravel (silica) grit.

It is also quite remarkable to observe that in one trial when no oyster shell was fed, the depraved appetite of birds resulted in a mistaken urge to consume grit in order to try to make up for the calcium deficiency when it was fed free choice. Fifty layers so fed consumed a total of 1,200 pounds of granite grit, or 24 lb. per bird, within 46 weeks without any apparent ill effects! Of course, they still produced thin-shelled, "soft-shelled" or without-shell eggs because of the calcium lack.

In view of these results, poultrymen do not need to worry about birds consuming too much grit, under normal conditions, when they have free access to a calcium supplement.

COMMENT

This is an interesting report and summary of research conducted at Ohio over a number of years regarding grit and its effects using various rations for all ages of chickens. The general results seem to indicate that little benefit will be secured from additions of grit to growing bird diets, while it will be of value when added to or offered free-choice with whole-grain or coarse feed laying bird rations. On the other hand, it will be of little value when added to, or offered free choice, when finely ground laying feeds of the all-mash variety are fed.

The Ohio group has not only reported on their own work, but also has summarized a great share of the available research in this field in their bulletin up to the date of publication. One of the most important points they make in the publication is the simple fact that one cannot rely on information on the subject on the results of merely one trial, but must use average results of many trials to secure worthwhile information.

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During the past three months, Vineland Poultry Laboratories has continued to challenge the makers of vaccines utilizing the B¹ Strain to submit their product to impartial testing by a recognized university poultry disease research laboratory. If the tests fail to prove that VIPOL 717 (LaSota Strain) Newcastle Disease Vaccine is superior in titre and immunity, the sum of $10,000 will be donated for poultry disease research.

All that we ask is that any other vaccine manufacturer participating in the tests establish an identical sum in escrow, to be used for the same purpose, if their vaccine fails to prove its superiority.

Make no mistake about it. We have been completely realistic in making this challenge. We would risk neither our reputation, built over nearly 50 years of patient service, nor $10,000, unless we were certain that impartial tests would overwhelmingly justify our faith in VIPOL 717 (LaSota Strain) Newcastle Disease Vaccine and the Vineland program of Newcastle Disease control.

Already a convincing weight of scientific evidence has been accumulated to prove our case—that VIPOL 717 (LaSota Strain) Newcastle Disease Vaccine confers higher levels of protection that persist for longer periods.

Research done at one of the nation's leading state universities demonstrated that the VIPOL 717 (LaSota Strain) Newcastle Disease Vaccine induced a significantly higher serologic immune response than the B¹ Strain.

Blood Titres Five Times as High

The initial laboratory test showed an HI titre five times greater for the VIPOL 717 (LaSota Strain) Newcastle Disease Vaccine than for the B¹ Strain. A second trial verified the 5-to-1 superiority in titre rating of the VIPOL 717 (LaSota Strain) over the B¹ Strain.

Tests conducted since these earlier trials have verified the superiority of the LaSota Strain used in VIPOL 717 Newcastle Disease Vaccine. Another university, in a different state, conducted its own tests on Newcastle Disease Vaccines. Research here showed that the HI response of the VIPOL 717 (LaSota Strain) was four times greater than the B¹ Strain under normal vaccination procedures. When scientists boosted the amount of vaccine to four times the recommended level, the blood titre response increased about 8-to-1 in favor of the VIPOL 717 (LaSota Strain).

The pathologists conducting the studies reported that the test was performed six times. **Each time the result was the same.**

Tests Have Real Meaning for Commercial Poultrymen

These findings on the immunizing power of vaccines have real significance for the poultryman—whether flock owner, broiler grower or commercial egg producer. This is especially true when we realize that every Water Newcastle Disease Vaccine on the market today **with the exception of VIPOL 717 (LaSota Strain)** is produced from the B¹ Strain. **Only VIPOL 717 utilizes the LaSota Strain.**

VIPOL 717 Retains High Potency

VIPOL 717 (LaSota Strain) Newcastle Disease Vaccine retains its power to immunize for periods as long as 24 hours and more after it has been added to the poultry drinking water. Because of the original high titre of the virus in the vaccine itself, it can stand dilution in the drinking water well beyond recommended levels.

This strain has an unlimited infecting potential that continues through the vaccination reaction period and insures the immunity of a maximum number of susceptible birds. Revaccinations on young chicks with VIPOL 717 (LaSota Strain) Newcastle Disease Vaccine are reduced to the minimum and are necessary only if the birds are carrying parental immunity at the time the vaccine is first given.

On the other hand, revaccinations with the B¹ Strain are necessary because this strain of virus lacks infecting potential among those susceptible birds that do not receive a dose of vaccine at the time of vaccination.

For over two years, Vineland Poultry Laboratories, who produce the VIPOL 717 (LaSota Strain) Newcastle Disease Vaccines, have been challenging the industry with this statement:

"The VIPOL 717 (LaSota Strain) Newcastle Disease Vaccine produces a higher titre and a more durable immunity than the B¹ Strain."

This challenge has been carried in nationwide advertisements for many months. In December, we backed up this challenge with $10,000. To date, not a single contradiction has been received from any vaccine manufacturer. Not one wanted to pick up the challenge.

Remember that the LaSota Strain is used by Vineland Poultry Laboratories exclusively as the basis for its VIPOL 717 Newcastle Disease Vaccines. See your nearest dealer or Vineland state distributor, or get in touch with Vineland Poultry Laboratories, Vineland, N.J., or 4068 Broadway Place, Los Angeles 37, Calif., for either the product desired or more detailed information.

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'HINKLEBURGERS' TO HELP BROILER PRODUCER?

UNIVERSITY PARK, PA. — "Hinkleburgers"—or henburgers in literal translation from the Pennsylvania Dutch—may open up new market possibilities for the broiler producer—yedt. So says Paul H. Margolf, Pennsylvania State University poultryman.

Mr. Margolf believes that people will consume more poultry meat if the poultry industry can offer them more specialty products. "Hinkleburgers" may help develop for poultry meat producers a market outlet along the lines enjoyed by producers of beef and pork. These meats go into the popular hamburgers and hot dogs which Americans consume at an astonishing rate, he said.

Unfortunately, in the past, many researchers have not followed this course, but have merely reported on results of one or two rather small trials without further confirming work.

It is also interesting to note that high silica (gravel) grit may serve the purpose fully as well (if not better) in the case of layers fed whole grain-mash type rations. This work also points out the extreme importance of offering layers adequate calcium supplies and the fact that calcite grit cannot satisfactorily replace the demand for the bird when fed whole-grain-mash type diets. On the other hand, little importance exists for any type of grit with finely ground rations of the all-mash type when properly supplemented with calcium.

Results of this study have been confirmed by several other universities, but on the other hand some studies do not do so. It is interesting to note that layers fed grit produced more eggs and ate less mash than birds on a straight all-mash ration in the 1958-59 New Jersey random sample egg test at Rutgers. The grit-fed birds ate an average of 2.16 lb. grit per hen and laid an average of seven more eggs than birds that had no grit. Also, the grit-fed birds ate .13 lb. less feed to produce a dozen eggs.

Recently reported work from North Carolina shows that grit of sufficient size results in better utilization of feed and higher average weights of turkeys at 22 weeks of age. Scott and Heuser (1957) have summarized the value of grit for both chickens and turkeys.

It still seems wise to use grit for layers, even with most all-mash rations, in spite of the somewhat varying and conflicting results so far reported. After all, grit does not constitute a very high percent of the cost of producing eggs. Whether or not to use grit with growing birds and with broilers seems to be much more subject to question. The relatively few trials favoring the use of grit with such birds show relatively minor responses which may not have been profitable under some conditions, especially when modern low-fiber rations were used. If high-fiber rations are used there is more logic to the use of grit with growing birds—for example, high-fiber "restricted growth" rations—although actual research on this point seems to be largely lacking.

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Blatchford's

Says Feed Man's Place in Integrated Hog Program Is to Provide Protein Supplement

SAN FRANCISCO—"The concept that a farmer can build a pork palace, shoat shack or pig parlor and keep it full by buying feeders at a sales yard and complete feed from a feed manufacturer is completely out of the question," declared Joseph D. Martin, Balfour, Guthrie & Co., Ltd., Fresno, Cal., at the recent Western States Meat Packers Assn. meeting here.

"There is not enough margin in it for the feeder," he said.

Mr. Martin reported to the packers on a "full-scale investigation" conducted by his firm as a result of last July's state-wide hog meeting in Stockton, Cal. Among other conclusions resulting from this investigation, he said, were that production method of marketing grain and hay and labor," and that the farming enterprise that finishes market hogs "must also be the same farming unit that maintains the sow herd and grows the grain and hay."

He said that his firm believes that feed manufacturers "have no place in an integrated hog program at this time," but rather their part is "to make a high protein supplement which the farmer who grows his grain and hay can mix on his own ranch."

"Only in this way could the western farmer compete with the midwesterner in the production of hogs and pork products," said Mr. Martin. He stressed that "production of pork is possible, but to be sound, it must of pork "must be looked at as a be part of an integrated farming operation."

He said that there is good opportunity in California to raise hogs and said that he was surprised that "some of the finest breeding stock is here in California."

Mr. Martin described a model operation that Balfour, Guthrie & Co. had investigated, together with Dr. Jesse Bell of Fresno State College. A proposed building plan could be completed at around $50,000, including land and equipment for the structure bought at about $7,000 or thereabouts, he said. His firm also has developed a "grain banking plan" whereby a farmer can deliver his grain at harvest and "we would return it to him weekly as a complete feed for his sows and market hogs," he added.

Mr. Martin described a sample 100-sow operation on the farm of Davis Swall, Lindsay, Cal. Mr. Swall markets an average of 15.74 pigs per year per sow at a total production cost of 15.2¢ lb., Mr. Martin said. He does this by growing 15 acres of alfalfa hay and establishing a sow ration of 25-38% ground hay, depending on dry or lactating animals. Mr. Swall also grows 145 acres of barley, double cropped with corn or milo, and adds a supplement he made himself.

Mr. Swall is "in the hog business like mostly every large cattle-feeding operation is in the cattle business," Mr. Martin said.

"Low Prices on Way Out"

The "low price blues" are on the way out, Mr. Martin added, and, although the hog raiser will be subjected to the hills and valleys of any business, "he will always have the advantage of a ready market."

In addition, if he looks upon hog raising as a means of marketing his grain and hay, "he definitely has an advantage on the midwestern farmer."

He advised the developing hog industry to employ a full-time qualified man "to coordinate the problems of the industry on an industry-wide level."

This man "can expect complete cooperation from the feed industry," Mr. Martin said.

Anticipating the hog market to expand in the West in the near future, several western meat packers told of plans they were making to add to their present hog-slaughtering operations to handle the increased supply.

Rigid laboratory control is not just a hobby! Nor is it a luxury. It is an absolute necessity for the feed manufacturer who wants to be certain that his feeds contain what his nutritionist says they should contain.

Lime Crest trace-mineral pre-mixes are made under rigid laboratory control. You can use them with full assurance that they will always put into your feeds what they are supposed to put there. *You* are protected by *our* laboratory control . . . and our research.

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Nulaid Association Reports 1959 Volume

SAN LEANDRO, CAL. — Dollar volume of business totaling $52,682,000 in the marketing of eggs and furnishing of feed, farm production supplies and petroleum products on behalf of its 10,500 members has been announced by L. N. Thompson, general manager, Nulaid Farmers Assn. (formerly Poultry Producers of Central California).

Marketing of 66 million dozen eggs was an all-time record of 14% above the year before. Feed volume totaled 313,000 tons, also above 1958. Sale of farm production supplies and petroleum product deliveries were also at an all-time high.

Cooperative margins as a result of this patronage amounted to $2,303,000—an increase of $320,000 compared with 1958.

Nulaid Farmers Assn., a farmer-owned and controlled cooperative, operates two electro-mechanical egg grading plants, 5 feed mills, and 42 branches and agencies throughout northern and central California.

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Dry, free-flowing partially hydrogenated animal fat.

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This man . . .

And this man . . .

have found the way to reduce disease risk in turkey feeding

They have seen how costly troubles can occur at any time. They have learned that diseases seldom attack singly . . . that a host of other troubles quickly attack birds weakened by disease or stress. Their successful solution to the problem of reducing disease risks through *protective feeding* follows.

"nf-180 pulled us through tight year"

Grower reported: "We couldn't have stood our usual mortality losses this year the way prices were. Using nf-180 kept disease down so we came through with very little trouble. Better feed conversion saved us money and our birds finished out well. Got a top price. Don't believe we could afford to raise turkeys without nf-180. especially in a tight year."

"Finished best flock in years"

This grower's last flock had made poor gains, suffered frequent off-feed periods and disease setbacks. His feed serviceman suggested nf-180 in the feed this year to prevent these troubles. Birds were started on 2 lb. level nf-180 feed and kept on it all through brooding period. Grower liked the size, vigor and livability of his flock so well he decided to continue 2 lb. level on to marketing. "Our death losses were the lowest and finish the best we'd had in years," he said.

"nf-180 gave us trouble-free season"

Turkey broiler grower had 8,000 on 2 lb. level of nf-180 from start to finish. Got to market without any disease troubles. Then put in another 8,000 for regular market. Kept these on 2 lb. level for 14 weeks and dropped to 1 lb. nf-180 per ton on to finishing. This flock just as trouble-free as first one.

"We don't start a

"It's taken care of most everything

Virgil Grigsby, Dover, Del., and his son raise some 30,000 turkeys a year. Five years ago paratyphoid swept through his flock until he was advised to check it with a 2-lb. level of nf-180. "And since then we haven't started a flock without using nf-180 protective feeding," he says. Here are his tape-recorded comments:

"Why did you try nf-180, Mr. Grigsby?"
"In 1954 we started with 14,800 Beltsville turkeys. Then paratyphoid hit and we lost down to 10,000 birds. I was told the only thing on the market that would do any good was a 2-lb. level of nf-180."

"How did it work?"
"We put our remaining 10,000 birds on nf-180 and at

"nf-180 is well

Harold Kauffman raises 10,000 to 25,000 turkeys each year in addition to operating the Farmers Feed and Grain store in Wayland, Iowa. These two businesses keep him up-to-date on feeds and medications. What's more, he knows just what is working best for farmers in his area. Here is how a recent conversation with Mr. Kauffman went:

"Mr. Kauffman, we're interested in your experience with nf-180. When did you start using it?"
"I started using nf-180 about 6 or 7 years ago for cold problems in my chickens and it did a good job."

"And you are using it now for your turkeys, is that right?"
"Yes, we use nf-180 all the way through the starting period. In fact, every pound of prestarter we've sold for the last 5 years has contained nf-180, and I don't think there is any other feed that can match it.

nf-180 protective

Turkey growers all over the country . . . men like Virgil Grigsby and Harold Kauffman . . . have good reason for their enthusiasm when talking about nf-180. They have discovered that it gives them a better chance to produce turkeys at a profit.

The reason is simple. nf-180 is the only drug that provides such wide-range disease protection. In fact, *it prevents and controls more turkey diseases than any other drug you can use.* With nf-180 on the job, from starting through finishing, you save more poults, they do better and you have fewer problems.

What's more, nf-180 is palatable. It stimulates feed

flock without nf-180"

that's happened to my turkeys."

once they stopped dying. They began to gain again so we kept them on a 1-lb. level from then on."

"You were satisfied with the results?"
"We figured it did an excellent job. And since then we don't start a flock without nf-180. It helps with blackhead, takes care of enteritis . . . in fact, nf-180 has taken care of most everything that's happened to turkeys on this farm."

"How is your feed conversion?"
"We have very good feed conversion. I think that nf-180 helps the birds do all they are capable of doing. If you keep your birds clean inside, they can't help but grow."

worth the money!" *says Harold Kauffman*

Whether nf-180 deserves all the credit, I don't know. But it does a good job."

"Have you ever used another drug in your starter?"
"Not since we started using the nf-180. We have been well satisfied with it. Maybe we go a little overboard . . . but nf-180 really does a good job."

"Do you also use nf-180 for specific diseases?"
"Yes, we shoot the 2-pound level to turkeys that are in a stress period . . . sometimes even a 3-pound level to straighten them out. And we use 4 pounds of nf-180 per ton of feed in treating blackhead."

"One more question. Do you figure nf-180 is worth what it costs?"
"Yes. nf-180 gets your birds off to a good start and keeps them in condition. I feel nf-180 is well worth the money."

feeding can increase your turkey profits

intake, improves growth and feed conversion, protects birds against stress. It more than pays for itself in better livability, improved growth and better feed conversion. nf-180 is safe for birds of all ages, including valuable breeder flocks. And men who rely on nf-180 to protect their breeder flocks report that it gives a dramatic improvement in hatchability. R. T. Maddox of Harrisonburg, Va., for example, says: "I've had much better hatchability since using nf-180. We started out last season with 76% hatchability and our overall average was 69% for the season. That compares with a 51% average a year earlier when we didn't use nf-180. Last year was my best for hatchability and profits since I've been in the turkey business!"

The chart on the next page shows how nf-180 gives disease-fighting versatility never equalled by antibiotics or other drugs. It also describes how you can set up a simple, effective nf-180 protective feeding program.

Remember that nf-180 is usually listed on feed tags as *furazolidone*, the scientific name for nf-180. Talk with your feed dealer about nf-180 medicated feeds for your particular needs. If he can't help you, send us his name and address. Write to Hess & Clark, Ashland, Ohio. We'll see that he gets complete details . . . and provide you with helpful information, too.

nf-180 prevents and controls more turkey diseases than any other drug

Comparison of nf-180 (furazolidone) with other drugs used in turkey feed medication

DRUG	Growth Stimulation	Typhoid & Pullorum	Paracolon	Para-typhoid	C.R.D. Sinusitis	Blue Comb	Hexa-mitiasis	Synovitis	Ulcerative Enteritis (Quail Disease)	Black-head	Stress Periods
***nf-180** (furazolidone) Level (grams)	YES 7½-10	YES P-50 T-100	YES P-100 T-200	YES P-50 T-100-200	YES P-50 T-100-200	YES P-50 T-100-200	YES P-100 T-200	YES P-50 T-100-200	YES P-50 T-100-200	YES P-100 T-200	YES P-50 T-100
Chlortetracycline Level (grams)	YES 7-10	NO	NO	NO	YES P-50 T-100	YES P-50 T-100	YES P-50 T-100	YES P-100 T-200	NO	NO	YES P-50 T-100
Oxytetracycline Level (grams)	YES 7-10	NO	NO	NO	YES P-50 T-100	YES P-50 T-100	YES P-50 T-100	YES P-100 T-200	NO	NO	YES 50
Bacitracin Level (grams)	YES 7-10	NO	NO	NO	YES P-50 T-100	YES P-50 T-100	NO	NO	NO	NO	YES P-50 T-100
Penicillin and Streptomycin Level (grams)	YES 2-5 (for penicillin)	NO	NO	NO	YES 75 Strep 25 Pen	YES 75 Strep 25 Pen	YES 75 Strep 25 Pen	NO	NO	NO	NO
Penicillin Level (grams)	YES 2-5	NO	NO	NO	YES T-100	YES T-100	NO	NO	NO	NO	NO
Penicillin and Bacitracin — 37½B plus 12½P Level (grams)	YES 5 Bac 1 Pen	NO	NO	NO	YES P-50	YES P-50	NO	NO	NO	NO	NO
Erythromycin Stearate	NO	NO	NO	NO	P-? T-YES	P-? T-YES	NO	P-? T-YES	NO	NO	NO
2 - Acetylamino 5 - Nitrothiazole	NO	NO	NO	NO	NO	NO	NO	NO	NO	P-YES T-YES	NO
4 - Nitrophenyl Arsonic Acid	NO	NO	NO	NO	NO	NO	NO	NO	NO	P-YES T-NO	NO
A Sulfa—Tio—Arsenical Combination	YES	P - ? T - NO	NO	NO	NO	P-YES T-NO	P-YES T-NO	NO	NO	NO	NO

KEY: P: Prevention level in grams per ton of complete feed
T: Treatment level in grams per ton of complete feed

*Each pound of nf-180 contains 50 grams of furazolidone

Look how easy it is to set up an nf-180 protective feeding program

Right from hatching, turkeys are threatened by diseases and stresses. No matter how ideal the management may be, poults are critically sensitive to stresses which lower their disease resistance. Protective feeding with nf-180 reduces the chance of a serious disease outbreak . . . keeps birds healthy, gaining and profitable. Here are plans that fit your needs:

1. **STARTING PERIOD** . . . use 2-lb. level in all feed from start, through brooding and first week on range.
2. **GROWING-FINISHING PERIOD** . . . check your past history and local disease problems. Choose the protective feeding program you need:
   - 2-lb level continuously should be used to protect against blackhead, hexamitiasis and other diseases.
   - 1-lb. level continuously gives wide protection against stress and many diseases where blackhead and hexamitiasis are not likely problems.
   - week-a-month plan for areas where disease is not a serious problem. Many growers report good luck using a 2-lb. level of nf-180 stress feed one week a month to clean up birds, fight stresses and knock out disease organisms before they can build up and trigger trouble.
3. **BREEDER FLOCKS** . . . as soon as birds are selected put them on a feed with 2 lbs. nf-180 for 2 weeks. Then switch to a feed containing 1 lb. of nf-180 and keep breeders on this level through the laying season. In case of severe stress or disease outbreak, put birds back on the 2-lb. level until the danger has passed.
4. **TO TREAT SPECIFIC DISEASES** . . . use a feed with a 2-4 lb. level of nf-180. Refer to chart above for proper level.

Why take chances with drugs that fight only one or two diseases? Use nf-180, the one drug . . . the only one . . . that offers wide-range effectiveness.

Protect birds—from poults to processor—with nf-180.

HESS & CLARK, Ashland, Ohio
Division of Vick Chemical Company

nf-180® brand of furazolidone

Benson's Aide to Talk At Nutrition Meeting

WASHINGTON — "Was It Really the Last Frontier?" will be the subject of a luncheon address by Bert Tollefson, Jr., assistant to the secretary of agriculture, at the University of Maryland 1960 Nutrition Conference. The conference is set for March 17-18 at the Shoreham Hotel.

B. Tollefson

As program liaison officer, Mr. Tollefson works with members of Congress and congressional committee staffs, White House officials, officers of federal agencies and farm organizations. He also travels with Ezra Taft Benson, secretary of agriculture, as his aide. He accompanied Mr. Benson on his recent trade development and good will trip to Yugoslavia, West Germany, Poland, Russia, Finland, Sweden and Norway.

In November, 1957, Mr. Tollefson was a member of the U.S. 12-member delegation to the Food and Agriculture Organization Conference in Rome.

He served as administrative assistant to Siguard Anderson, ex-governor of South Dakota, for more than three years, and was secretary of the State Highway Commission and served as administrative asistant to E. Y. Berry, representative from South Dakota, for 2½ years.

Nutrena Feeds Names Peoria Swine Head

PEORIA, ILL.—Jerry D. Enabnit, Nutrena Feeds northern Illinois swine specialist headquartered in St. Charles, has been named head of Peoria area swine activities by Earl J. Raff, regional sales manager here.

Mr. Enabnit will service Nutrena Mills, Inc., swine feeds and programs, including the firm's Pigloo production system, to farmers in central Illinois.

He joined the firm's sales force in 1956. He was formerly a high school teacher and coach and a heating company sales representative. Mr. Enabnit graduated from the University of Iowa.

"If Gooch recommends a feeding program they've proved it works. As a dealer, knowing my customers will get results helps me sell feed."

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Feeder Pig Sales Scheduled in Ohio

COLUMBUS, OHIO—Nearly 1,000 feeder pigs are expected to sell at Ohio's first feeder pig auction of 1960, scheduled March 9 in Chillicothe.

C. C. Bowen, Ohio State University extension marketing specialist, said sale time is 2:30 p.m., and the place is the Producer's Livestock Market.

The sale will offer farmers an opportunity to bid on uniform lots of graded feeder pigs, locally produced, which weigh from 30 to 120 lb. The pigs will be sorted according to size, breed characteristics and quality. They also will be vaccinated for cholera and inspected by a veterinarian on arrival at the sale yard docks.

Other feeder pig sales are scheduled for Chillicothe April 27, June 8, July 20, Aug. 31, Oct. 12 and Nov. 16.

Mr. Bowen reports similar sales will be held in Hillsboro in May, July, October and December, but the dates are to be selected. Feeder pig producers in Guernsey, Noble and Coshocton counties plan a sale in that area the latter part of June, he said.

In five auctions last year at Chillicothe and Hillsboro, more than 5,000 feeder pigs were sold.

Robert Cosgrove

D. B. Kinkaid

George Ward

Elmer Olson

OFFICERS ELECTED—New officers elected by Dawe's Laboratories, Inc., include: Robert Cosgrove, previously operations manager, named vice president, operations; D. B. Kinkaid, marketing manager, elected vice president, marketing; Dr. George Ward, director of research, is now vice president, research, and Elmer Olson, comptroller, was elected treasurer.

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The leading combinations are now performing in this house, and in test flocks in every important broiler area. Years of genetic research have been invested in each combination, even though it may never be produced commercially. For after years of improving the Arbor Acres female, developing a better bird is no easy task. But if that better bird ever comes, it will come from this house.

Any way you figure it, you're better off if your broilers come from an Arbor Acres pullet crossed with a proven male.

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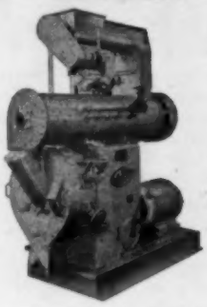

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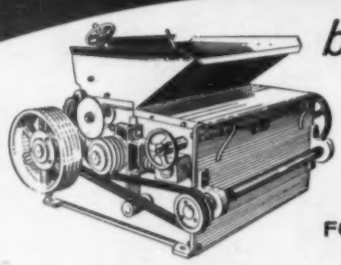

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SIZZLING SIXTIES?

"Does this sizzling mean that we are going to be so good and so efficient and so expert that we will sizzle, or does it mean that some of us are going to fry?"

By Maurice Johnson, President
Midwest Feed Manufacturers Assn.

EDITOR'S NOTE: In this article, Maurice Johnson, president of Midwest Feed Manufacturers Assn., analyzes prospects for feed manufacturers in 1960. Mr. Johnson, executive vice president of the Professional Feeds division of Spencer Kellogg & Sons, Inc., gave the talk at the recent 16th annual convention of MFMA in Kansas City.

The adversity that occurred at the time when we started the Midwest Feed Manufacturers Assn. was the shortage of feed supplies in 1943 and 1944. That was interpreted by farmers and by newspapers and by many others as being planned and executed by the feed industry.

Because of that, we got together and had open discussions with the college people and with newspaper men and radio people until, rather quickly, they were convinced that there was nothing sinister about the way we handled ingredients. They understood it was an economic fact that when you put a ceiling on something and the market goes up to the ceiling, the product becomes scarce. As a result of that conference and subsequent conferences, we developed a different relationship with the farmer in the Middlewest, and we had a more wholesome relationship between us.

The adversity that we face today is the rather sensational decline in poultry in the Midwest which, I believe, represents two thirds of your business.

The hatcherymen with whom I have talked in the last week say that bookings go all the way from 35% below a year ago to 75% below a year ago. The farmers who have the choices whether they are going to stay in the chicken business with their obsolete poultry equipment and a market of 17-18¢ doz. are making that choice now, and it is not favorable. I think we are at a point when we should discuss some of the things that are involved.

I suppose as outgoing president of this organization, I should stand here and say everything is going to be just fine; the market on eggs is going back up to 90¢ doz. this fall and all of these farmers are going to go back into the chicken business. That did not happen to some other industries. I don't think that people would go out and start raising mules again now if mules went up to $300, or whatever an attractive price is or should be. They have made other choices, and they may have decided not to go back into the chicken business. They may have made that decision, and if indeed they have made that decision, we have some decisions of our own to make right here. If the chicken business does not return to this area, and if it comes back to some other area, we have some other things to think about.

Industry Development

Let's look back at the industry as it has developed over the several years you have known it. I think many of you either know of or have seen the decline in the horse and mule feed business to the point where numerous feed companies just simply quit because they could no longer survive on the business they were accustomed to. Some made a decision to change and do something else and to do it well. Many stayed in the business and have prospered. Take a look at the contracts that have caused many companies years ago to go out of business. The contracts that were written for 12 or 18 months with wholesalers who were unable to take those contracts as markets declined.

Many feed manufacturers who bought supplies against those contracts went out of business back in the 20s. There may be some contracts in your files that are of similar nature and will cause the same kind of a thing to occur. Look back three or four years and you will realize that 90% of the surviving farms in Kansas and Missouri had chickens. You go out in many counties now in these two states and less than 50% have poultry.

Not very many years ago, nearly every farmer had dairy cows and dairy feed was an important item with the miller regardless of his location in the Middle-west. Now dairying is confined to certain areas. And even with the high price of milk in, we'll say Oklahoma and/or Texas, you are not seeing these farmers go back into dairying in the way you might imagine they would.

You have seen in many small towns, perhaps we could take an average county seat town, six or eight or ten feed stores, so that any competent salesman could go out and get a feed dealer if he worked hard enough. He at least could get his feed "in" with somebody else's feed and feel that he was represented in that town. Most of that business was poultry feed. Today, that town might have one or two dealers and those dealers aren't carrying four or five different lines of feed. They are carrying one or two and usually one. And where are the other 10 or 12 feed manufacturers who were in that town?

Now, let's take a quick look ahead and see what is right in front of us. Where is the poultry? Where is it going to be raised? Who is going to produce eggs? Have you decided in your own mind that it is coming back with a rush in Kansas and Missouri and Iowa and Nebraska, Oklahoma and Texas? If you've made that decision, perhaps you can continue to function in the manner that you have functioned in the past, merchandise in the manner that you have been merchandising in the past and have your salesmen doing the same things. You will succeed, if your conclusion is right.

What About Financing?

Where is the money going to come from for this kind of a revival, whether the revival occurs here or in some other area. Are the bankers pleased with what has happened to the poultry business the last few years? Are the feed companies, directed by their boards of directors, going to be willing to finance large institutions when the price of eggs for a year and a half has been below cost of production and when experience with broilers has told them that this procedure does not always pay? Is money not going to be tight, and is not the demand for it going to be so strong that we can make our rules on money, rather than to have someone else make those rules for us?

Where are the farmers that are going to do this job? They are declining so fast that they have been reduced more than 50% in the last 10 years in many of the areas in which we operate. If you are going

to try to start dairy activity in some area, are you going to be able to convince those farmers that they should work seven days a week in order to make a living like their neighbor does in five, because he works in a plant 30 miles away and drives back and forth every day? Is it going to be easy to have a convention of dairying and/or poultry in the area that you are familiar with? Are you one of those who is represented in this town that has two feed stores, or have you made the decision to go direct because you are hungry and cannot get a dealer in that town? What kind of a decision have you made or are you about to make in your particular business?

Now we stand here and look at each other and wonder what kind of decision the other man is going to make, and we realize that every feed man we look at is a different kind of a feed man than we are. No two of us are doing this job the same way. One is making a specialized feed for specialized type of production in his community. One is making all the different feeds that he thinks anybody might buy and selling them at margins that other men could not possibly get on his specialized manner of production. The small feed manufacturer looks at the feed business in one way; the large one looks at it in another way. The farmer looks at the local feed miller with one set of eyes, and he looks at the large manufacturer with another.

I think each of us, perhaps, has to put himself in a framework. He has to build a picture of what he wants the farmer to see when he is being looked at. He must decide what kind of a picture he wants to present and then be faithful to that picture and hope that he's made the right decision. No one type of feedmill is going to survive this revolution. Many different types are going to survive, but I think you probably will conclude, when you think about this, as many of you already have, that you're not going to be all things to all types of farmers. You're not going to be the feed manufacturer who makes a specialized product for a group in one area at a very low cost and then on the other hand makes 75 different feeds for all his neighbors and keeps both projects balanced and profitable in his own operation.

Need to Adjust

So each of us is trying to do just a little different job, and yet we're all in the same big pasture trying to get a job done feeding livestock. As you make these decisions, can your management and the owners of your company change to accommodate your new concept? Can you change your attitude that has been developed over a period of 20 years—an attitude that has been developed by having 23 million hens in Kansas and now has to be revised because there may be only 8 million left? Can your production be changed so you will produce these products in a different manner—deliver them in a different manner—finance them in a different manner? Or are you and many others going to cling to a concept that worked in 1946 and may not work in 1960.

Is your sales personnel still doing the same thing because it worked two years ago, or are you conditioning them and educating them to be versatile and to get into this picture in a business-like way that will require serious changes in their attitude? Is your field staff adequate? Are you getting into the actual production of turkeys or production of eggs or broilers? Is your field staff trained and adequate to do that job? Or do you just think they are because they've been talking about chickens for the last 15 years? We have found that there is quite a difference in talking about the production of eggs and actually producing them, just as there is quite a difference between talking about a jet engine and then going out and building one. Do you have enough technical people in your own staff to do this job, or do you

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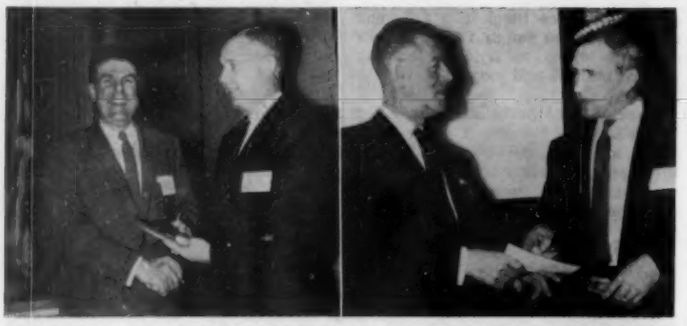

WASHINGTON CONVENTION—Here are a couple of pictures taken at the Washington State Feed Assn. convention in Yakima. In the first picture, Russell Wriglesworth (right), General Mills, Tacoma, the retiring association president, receives a plaque honoring him for his service. Making the presentation is Ray Whitcomb, Bleyhl's, Inc., Grandview, central Washington district governor for the association. In the second photo, one of the feed men who attended the Pacific Northwest Feed Mill Production School receives a "report card" showing his "devotion to serious study" during the school. Jack White (left), Morton Salt Co., Seattle, convention chairman, makes the presentation to Oscar Peterson, Hansen & Peterson, Mt. Vernon, Wash.

have a relationship with somebody else who does have this technical background and on whom you can depend?

Or will the old way return? Will the traditional farmer fill that old chicken house up with chickens again when the price goes back up next fall? Will he take the calves out of the chicken house and clean the floor and put feeders back into it and try to get back into the business again? Will he build a new chicken house when the price of eggs has been below the cost of production for all this period of time, or will he remember the problems? Will he have a place to sell his eggs, or has his produce dealer gone out of business? And will the people who are buying eggs now from contract producers ever go back out in the open market and buy eggs from Mr. and Mrs. Jones again through the produce dealer and through an assembler of eggs in some city?

Each one of us can decide what we're going to do to fit into this new way of producing, if there is indeed a new way of producing the eggs and the milk and the meat for this country.

I was fortunate this last summer to talk to some feed and livestock producers in England, Holland and Belgium and I discovered that their attitude is somewhat different than ours has been with respect to the business of going into completely integrated operations. One man who directs a sizeable portion of feed production in the British Isles said when I asked him whether or not they were producing broilers and producing eggs: "Oh, of course not and we don't intend to." And I asked him why and he said: "We think other people should take that responsibility, and that we should concentrate on the business of producing feed as economically as we can produce it, and produce it so economically, in fact, that nobody producing eggs can afford to build a feed mill. We don't think they can build a mill and write it off and compete with us the way we're producing feed." He said: "You know, over here we manage our money a little differently than you people do in the States." He said it would terrify the business man in England to finance the way we do. He produces his products as inexpensively and efficiently as he can and delivers them as cheaply as he can and lets others arrange financing against that kind of a product.

Well, he may change his mind, but he may not. Maybe he was really telling us something about financing that not very many of us have learned as yet. And as the money is tighter or the money cost is higher in this country, and as our contracts turn around and bite us from time to time, maybe we should think seriously about doing our own job as efficiently as we can and letting the demand for contracts be so compelling that we will set some of the terms ourselves and not let those terms be set by those who want to get into this business.

In Holland, one feed man said that they were not too concerned about efficiency at the moment; although they felt they had to be soon. Everybody producing broilers in that area seemed to be making money. Their broilers are being produced by people who had 500 or 1,000 on a farm, and they didn't think that they were going to get into mass production of large numbers right away because their land was so expensive,

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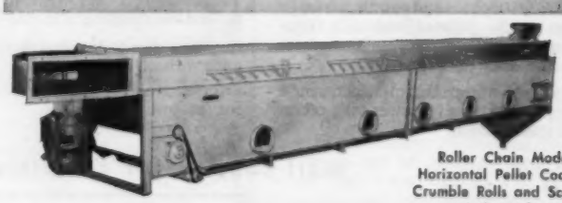

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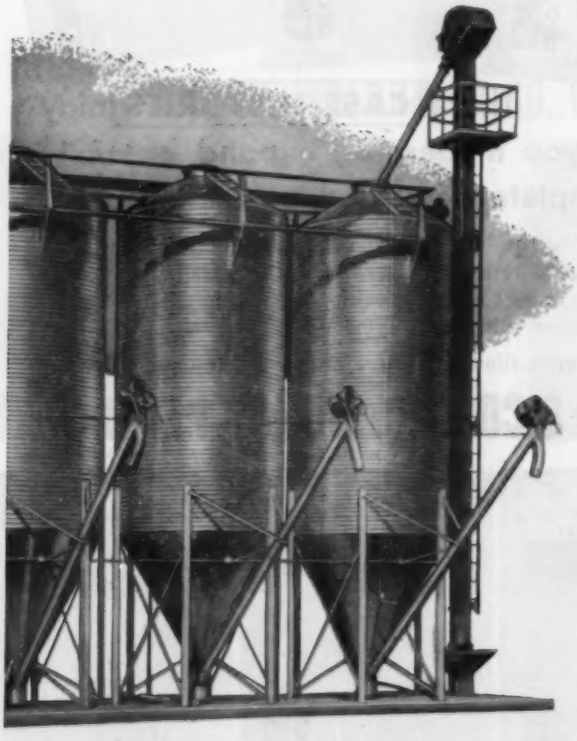

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DEHY GROUP OFFICIALS—Ralph Beermann (left), Beermann Bros. Dehy, Dakota City, Neb., and immediate past president of the American Dehydrators Assn., and Joseph Chrisman, ADA executive vice president, chat during a break in sessions at the group's annual convention Feb. 3-5 at the Broadmoor Hotel in Colorado Springs, Colo.

and it cost so much to build buildings. The feed millers there have no reason to finance heavily.

Dangerous Happenings

I think that perhaps we have been operating a little differently than either one of these, because our land is inexpensive, our labor is inexpensive in the broiler area, and our buildings are cheap. For that reason, we finance or encourage the financing of hundreds of thousands of broilers because we need the business, or because, after all, it doesn't cost a lot to get in it and maybe we'll make some money by doing it. There are some dangerous things going on in this business, and the lessons that have been learned have been costly, and not all of us have learned our lesson.

In California, a couple of weeks ago, I visited the Petaluma area. I suppose many of you are familiar with the Petaluma area where poultry was once, and perhaps still is king; where poultry houses dot the countryside and are built so close together you can almost jump from roof to roof. Perhaps 50% of them, according to my guide, are empty. And most of them would look modern and efficient on a midwestern farm. They are empty because of inefficiency and disease and low markets. And the 20 or 30 feed mills that I inquired about in that area are running at 40 to 50% capacity. I don't know whether they are making money or not.

But right beside these chicken houses that have become obsolete in the Petaluma area are some huge poultry farms under construction—150,000-200,000 chickens per ranch, operated as efficiently as anything you have ever seen. They buy their feed like you buy gravel or flour or any other kind of specification product. They gather their eggs in electric carts and feed from electric carts. One man takes care of from 8-15,000 hens. Their mortality is figured right down to hundredths of a percent. They know precisely what they're doing. They're producing eggs for a nickle a dozen cheaper than most people on a similar efficiency type basis are doing in this part of the country. And yet their neighbors have gone out of business. And these people are not only surviving but they are prospering on a market that runs around 29¢ doz.

Are we learning our lessons—do we have something to learn from that and from their big dairy operations with which I am sure you are all familiar? Are we aware of what's going on in the feed lots of California and Arizona? Do we know anything about the turkey business in this area compared with the way they do it in California? We don't have to go out to any other country to see that there are some things going on that perhaps should tell us that things are changing here faster than we realize. So to come back to the topic that Lloyd gave me, which is, "The Sizzling Sixties."

I wonder if we shouldn't take stock of ourselves and see if this sizzling means that we are going to be so good and so efficient and so expert that we will sizzle, or whether it means that some of us are going to fry? I think we should be extremely prudent in the next year—in the next 10 years—in making the decisions as to the direction we are going. Be sure that our staff is qualified to go in that direction, making sure that our manpower is trained to make that direction pay and be absolutely sure that in producing these essential products, that we do it in the modern way, the efficient way and the way best suited for our own business.

I'm not trying to say, and I hope you don't interpret this meaning, that there is only one way to go and one thing to do in the feed business. I certainly don't think that can possibly be the case. I think that there are many, many ways to go and many ways to make money and many types of farmers and feeders to serve and many profitable conclusions to arrive at, all different. But I think if each of us tries to do all of those things and be all things to all people, we will fail. But if we carefully make these decisions as to what we are best suited to do, we individually will be successful. And we will not necessarily be doing the same kind of a job that our neighbor is doing, nor would we have made the same decision. Whatever decision we do make, we must make it well and must follow it well.

South Faces Problem In Japanese Market For Soybean Crop

By Special Correspondent

MEMPHIS, TENN—The South faces the possibility of marketing its vast soybean crop at a lower price unless a pressing problem is thrashed out with Japan, its chief importer, the Mid-South Soybean & Grain Shippers Assn. was told Feb. 17.

About 180 delegates heard David Farlow, Hudson, Iowa, assistant to the executive vice president of the American Soybean Assn., explain the problem during the annual mid-winter meeting at the Hotel Claridge.

Mr. Farlow said the Japanese Ministry of Health and Welfare, counterpart to America's Food and Drug Administration, does not want more than .07% Morning Glory seeds in their soybeans. The MHW set this limitation as the maximum amount

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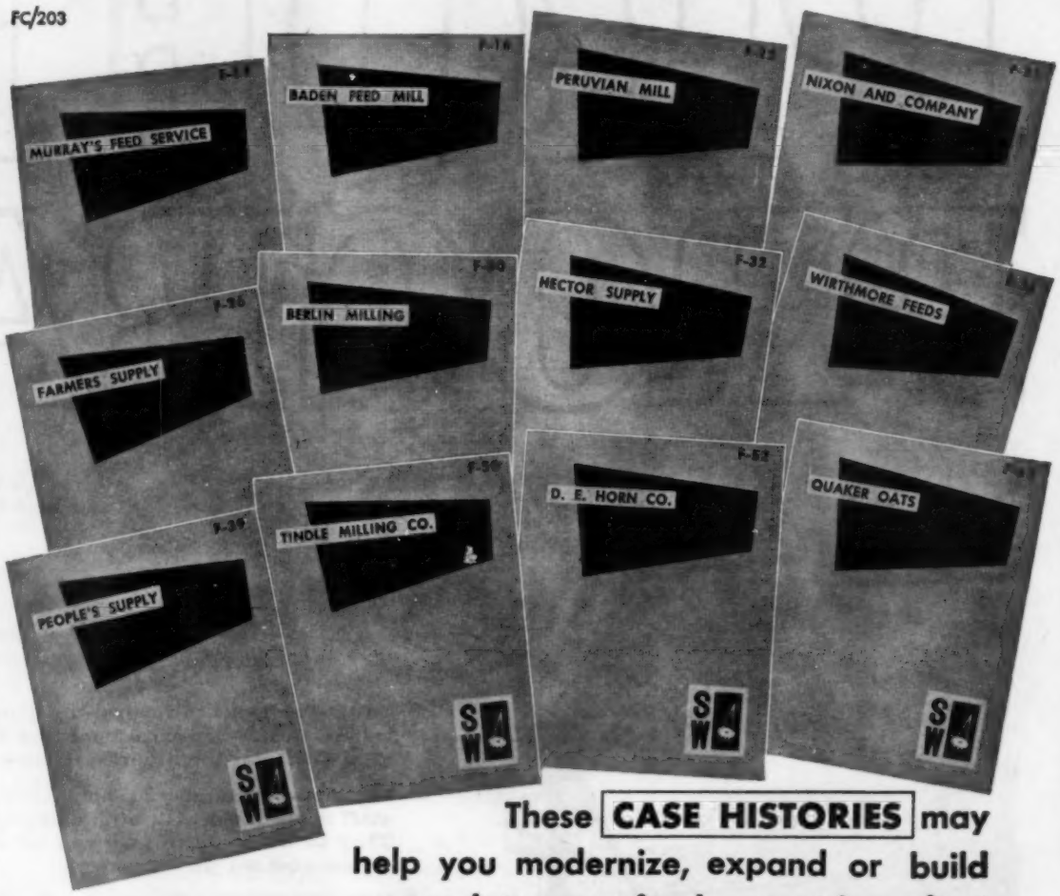

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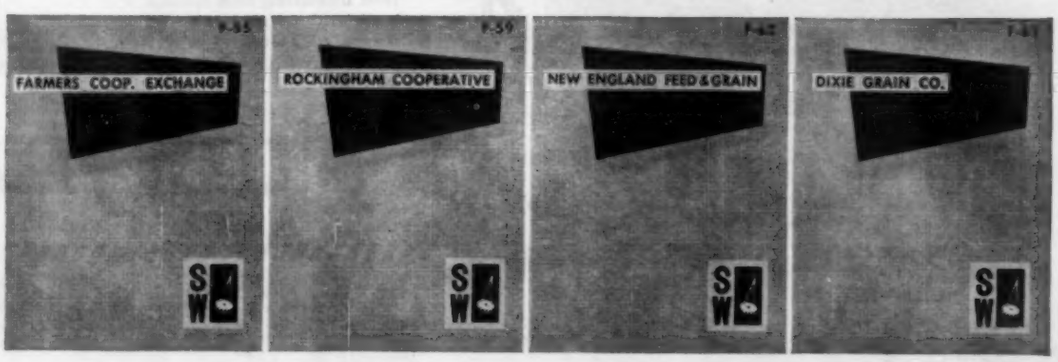

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of the seeds that may be contained in any shipment.

He said the Japanese agency claims the seed in excess of .07% is toxic.

Meaning of Ruling

The recent Japanese ruling means that soybeans containing more than .07% Morning Glory seeds must be cleaned before being used for human consumption. Thus, Japanese importers must pay the cleaning cost in such cases. Eventually this expense must be borne by Southern growers, he indicated.

Otherwise, the South's soybeans cannot be purchased by Japanese importers as matters now stand.

Mr. Farlow recently spent 33 days in Japan seeking a solution to the situation that would be amicable with Japan and American growers.

The ASA official said the ruling would affect only soybeans grown in the mid-South. Northern and mid-western beans are virtually free of Morning Glory seeds, he said, and the result may be to cause Japanese buyers to purchase from these latter areas.

If this happens, Mr. Farlow said, the mid-South soybeans then would be sold to processors in the U.S. at a lower price than they now command. Presently, mid-South soybeans receive premium prices on the export market, he said.

The Japanese buy about 25% of total American soybean production, Mr. Farlow pointed out, or about 40 million bushels annually. He emphasized the ruling was by the Japanese government, not the soybean buyers themselves, and the buyers in Japan are protesting the restriction as much as the American sellers.

Mr. Farlow told the group his association is working to solve the problem. He said one method under consideration was labeling each shipment as to Morning Glory content.

Ross Milner, extension economist in grain marketing at Ohio State University, told the group that the profit motive in business is sound, largely because it stimulates efficient operation.

"Efficient firms get a large output for the inputs they use," he said. "Such firms usually perform a large service to themselves, their customers and community. Through competition, increased efficiencies sooner or later benefit the customers and others. Also, part of the net income of a successful firm is normally used to improve its facilities and services."

Mr. Milner said that to succeed, a business must do more than simply "copy" the management ideas of a competitor that has been highly successful.

The extension economist cited the study of 121 country elevators in Ohio, in which net incomes vary from a loss of $12,240 to a gain of $86,616. Then he gave factors that entered into the success of some and less success or losses for others.

Walter Blanton, Carrollton, Texas, gave a report on progress of negotiations on the new Uniform Grain Storage Agreement. Mr. Blanton, on the committee for Country Grain Shippers in the Dallas, Texas, area, has been in several negotiation meetings.

ATTEND SOUTHEAST MEETING—Dr. L. A. Wilhelm (left), director of poultry development and market research, Quaker Oats Co., pauses between sessions at the Southeastern Poultry & Egg Assn. convention to discuss grit feeding with Charles L. Davidson, president, Stone Mountain Grit Co.

Pfizer Moves Public Relations Man to Italy

TERRE HAUTE, IND.—Charles E. Lofgren, assistant in public relations at the Pfizer Agricultural Research Center here, will be moved to Rome, Italy.

He will be working with Dr. E. M. Sacchi, former Terre Hautian who moved to Italy 17 months ago to help in the Pfizer agricultural development program of the southern European and middle eastern countries.

According to J. J. Thompson, vice president of the Pfizer Agricultural Division, domestic and international, "Mr. Lofgren's move fits into the company's policy to help our young men advance themselves within the company during its continuing worldwide growth."

Mr. Lofgren was selected for his new position "due to his keen interest in the 4,000-5,000 foreign visitors to the local Pfizer farm each year."

Before coming to Pfizer, 32 months ago, he taught high school agriculture for three years.

Manager of Buffalo GLF Plant Named

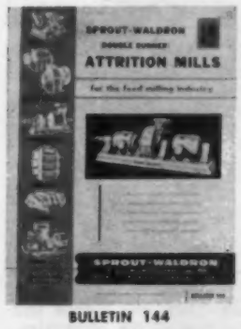
BUFFALO, N.Y. — Terrance H. Sheehan has been named manager of the Buffalo G.L.F. feed plant, Richard W. Smith, mills division manager of the Cooperative G.L.F. Exchange, Inc., announced this week.

Mr. Sheehan was personnel and safety manager at the Buffalo plant in 1956, when he became manager of the Binghamton, N.Y., plant. He returned to Buffalo in 1959 as production manager. He succeeds Lionel Ball, who has been acting manager as well as division plant engineer.

Mr. Sheehan joined the purchasing and marketing farmer cooperative in 1945. He has managed egg stations at Wellsville and Batavia, N.Y., and Honesdale, Pa., and for three years managed the G.L.F. farm store at Perry, N.Y.

NEW IOWA FEED PLANT

OTTUMWA, IOWA—The Johnson Elevator Co. has begun operation of its feed plant here, with formal opening date planned for late in March. Orval Johnson, the president, has been the local dealer in Purina feeds and operated a portable mill. The plant has a capacity to grind and mix 70-80 tons of feed daily. The building has storage capacity for 17,000 bu. of grain.



BULLETIN 144

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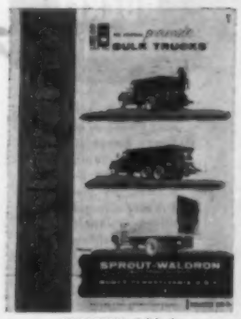

BULLETIN 203-A

BULLETIN 97

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BULLETIN 112-A

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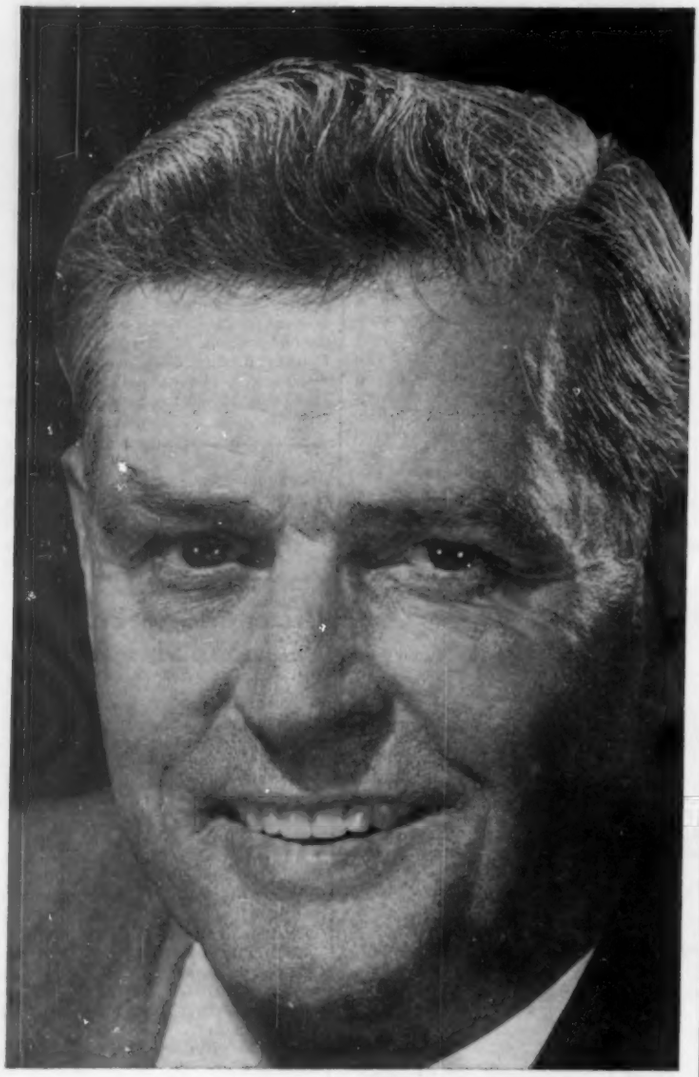

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SELLIN' SAM — By Jim Zilverberg

Buckeye Opens New Incubator Warehouses

SPRINGFIELD, OHIO—The Buckeye Incubator Co. has announced the opening of new factory branch warehouses in Cullman, Ala., and Forest, Miss.

The new warehouses will offer the complete Buckeye line of mechanical feeders, waterers, nests, egg coolers and other equipment, supplies and repair parts.

The Mississippi warehouse will be run under the joint supervision of Cy Wells, district manager, and J. L. Puckett, warehouse manager.

The Alabama warehouse will be run by Mr. Wells and Kennan Wood, district representative.

The two new warehouses have been built to establish "closer representation and better local service," according to Jack Hill, vice president, sales.

Mr. Wells has been with the firm for several years and formerly was district manager for Texas. He is responsible for all sales and service of the line of equipment in both Mississippi and Alabama.

Mr. Puckett has long been connected with the poultry industry in this area and is acquainted with many area hatcherymen, broiler growers and egg producers.

Mr. Wood will be in charge of poultry equipment sales at the Alabama warehouse. He formerly was sales manager of the Alabama Poultry Supply Co., distributor of poultry equipment and medication preparations.

Nine Midwest States Unite on Ag Problems

DES MOINES, IOWA—A committee to provide cooperation between Midwest states in solving agricultural problems, including problems created by "alarm over residues, pesticides and drugs," was formed by legislators from nine midwestern states meeting here this week.

The legislators held a two-day meeting to map out the direction the committee will take, according to John Reilly, Chicago, the council representative.

David Davis, an Illinois senator from Bloomington, was named temporary chairman of the committee.

Among the other subjects the committee discussed were ways to implement marketing of farm surpluses.

Representatives from Iowa, Illinois, Indiana, Kansas, Michigan, Nebraska, North Dakota, Ohio and Wisconsin attended.

Charles Figy, assistant to Ezra Taft Benson, secretary of agriculture, represented the federal government at the meeting.

THE PRICE IS RIGHT

ROSS BUCKET ELEVATOR

Get a Ross Bucket Elevator! Ross gives you all-bolted, heavy gauge steel construction. Ventilated or closed legging. Box Type if desired. Hy-Speed cups. Rubber belting. Choice of drives. Galvanized if required. Dust-free operation. Made for inside or outside use. All sizes. 100 to 6000 bushels per hour. Send for literature.

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ROSS Machine & Mill Supply

Automation in Manufacturing
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Ross Machine & Mill Supply, Inc.
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Gentlemen: Please send complete information on Ross Bucket Elevators.

Name _____

Firm Name _____

Address _____

City _____ State _____

Win Free!

This PHILCO Stereophonic High-fidelity Sound System

in DDF's "NAME THE PUP" CONTEST

18 other prizes!

3 POLAROID LAND CAMERAS
Famous camera that lets you snap a picture and see it sharp and clearly developed a short minute later.

15 SHEAFFER'S PFM PEN FOR MEN SETS
Matching pen and pencil sets featuring the world's only pen with an inlaid point of precious metal.

WATCH SUBSEQUENT ISSUES
SEE HIM GROW!

No labels to mail—no jingles. Just give the Weimaraner pup a name. That's all there is to it! The prize is a Philco Phonorama VI—the ultimate in stereophonic high fidelity reproduction. Retail value $675.00!

Peebles' DDF is the new dog food pre-mix that gives you 3 ingredients in one: Important milk nutrients, real cheese for appetite-sharpening aroma and flavor, essential vitamin fortification. It's easily incorporated into dry or wet dog food or biscuits. Saves money by reducing inventory needs, offers single-source purchasing economy. Try it. Write for complete information and sample.

WESTERN CONDENSING COMPANY
Appleton, Wisconsin
World-Wide Producer of Quality Milk Products
DIVISION OF DAIRIES INC.

CONTEST RULES!

WINNERS WILL BE ANNOUNCED DURING WEEK OF PET FOOD INSTITUTE CONVENTION—SEPTEMBER 8 AND 9

1. Print the name you would give to the Weimaraner pup in 25 letters or less on entry blank or plain piece of paper.
2. Send your entry along with your name and address to: "Name the Pup" Contest, P.O. Box 7791, Chicago 77, Ill.
3. Contest is open to everyone in continental U.S. except employees and families of employees of Foremost Dairies, Inc. and its Divisions, its advertising agency and its agents. Entries will be judged on originality, sincerity, and aptness of thought. Judge's decision will be final.
4. Each entry must be the original work of the contestant. No entries will be returned—no correspondence will be entered into. Duplicate prizes will be awarded in case of a tie. Winners will be announced during the 1960 American Petfood Institute Convention. All entries become the property of Foremost Dairies, Inc. Contest is subject to all state, local and federal regulations.
5. All entries must be postmarked by not later than midnight May 12, and received no later than May 16.

OFFICIAL ENTRY BLANK

NAME THE PUP
P.O. BOX 7791
CHICAGO 77, ILL.

My name for the Weimaraner pup is_____

NAME_____ TITLE_____

FIRM NAME_____

STREET ADDRESS_____

CITY_____ ZONE____ STATE_____

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JACOBSON HAMMERMILLS

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Nearly a Half Century of Service to the Feed Industry

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Milk Production Per Cow at High; Production Down

WASHINGTON—Milk production per cow in 1959 set a new record, but, nevertheless, total production continued its decline, falling by about half of 1%, the U.S. Department of Agriculture reports.

The decline in total output during 1959 was attributed in a milk production report to the decrease in number of milk cows on farms.

Milk production per cow topped the previous record set in 1958 by 122 lb. Milk per cow averaged 6,438 lb., an increase of nearly 2% from 1958. Annual milk per cow was 16% above the 1948-57 average.

Milk cows on farms in the U.S. produced 124,396 million pounds of milk in 1959. Production was down about half of 1% from the revised 1958 production of 124,883 million pounds. There has been a continued decline since the record high milk production was reached in 1957. Total production was 4% above the 1948-57 average.

SPEAKERS—Dr. Robert R. Spitzer (left), president, Murphy Products Co., Burlington, Wis., was one of the speakers at the American Dehydrators Assn. convention in Colorado Springs. Fred E. Pfaff (right), nutritionist, Balfour, Guthrie & Co., Fresno, Cal., also was a speaker on the program.

Regional Trends

USDA notes that annual output per cow has increased every year since it passed the 6,000-lb. level for the first time in 1956. Production per cow showed the most significant gains from 1958 in the west north central and south Atlantic regions. Increases in these areas were about 3%. Rate of milk flow was up 2% in the north Atlantic and the West and up 1% in both the east north central and south central regions.

Milk production increased from 1958 in the east and west coast regions, but decreased in the central part of the country. The West showed an increase of 3% due primarily to heavier output in California, Idaho and Arizona, USDA points out. Production increased 2% in south Atlantic states, as Florida had a substantial gain. In the north Atlantic region, Pennsylvania and New Jersey contributed most of the 1% gain.

In the other three regions where milk production declined from 1958, only two states—Minnesota and Louisiana—had increases, USDA notes. Production was down 1% in the west north central and 2% in both the east north central and south central regions. Of the six major milk producing states, Minnesota, Pennsylvania and California attained new record highs in production, while Wisconsin, New York and Iowa indicated declines from 1958.

Milk cow numbers have declined each year since the small upturn in 1953, and last year was no exception. The 1959 number of milk cows was the smallest since annual estimates were started in 1924. The average number of milk cows on farms during 1959 was 19,322,000 head. This was about 2% less than in 1958, when 19,773,000 head were on farms.

Milk cows increased 1% from 1958 in the West, but decreased in all other parts of the country. The number decreased 4% in the west north central region, followed by 3% in the east north central and south central and about 1% in both the north and south Atlantic.

In 1959, numbers were up from the previous year in only seven states—Florida, California, Idaho, Arizona, New Mexico, Utah and Nevada. Wisconsin, the leading milk cow state with 2,192,000 head, registered about a 2% drop in the milk cow population. Second and third ranking states—Minnesota and New York—both showed the same declines in milk cows.

test shows

Whitmoyer KEMITRACIN ANTIBIOTIC SUPERIOR

read these excerpts from the test data

1. "A combination of bacitracin methylene disalicylate* and penicillin produced the greatest weight gains and best feed conversion.

2. "Bacitracin methylene disalicylate* was slightly superior to zinc bacitracin in stimulating growth and significantly better in feed efficiency.

3. "The weight gain response to zinc bacitracin was not as good as the response to bacitracin methylene disalicylate*.

4. "Penicillin gave the poorest response of all antibiotics tested."

*The antibiotic content of KEMITRACIN is bacitracin methylene disalicylate. Whitmoyer KEM-PEN-10 is a combination of KEMITRACIN and penicillin.

Get the Detailed W. A. R. F. report
Write Dept. FS-3

KEMITRACIN COSTS LESS TOO

Whitmoyer LABORATORIES INC

Manufacturing Chemists
MYERSTOWN, PENNA., U. S. A.

WAREHOUSE STOCKS AVAILABLE AT THESE AND OTHER CONVENIENT U.S. AND FOREIGN LOCATIONS:

Worcester, Mass. Gainesville, Ga. Albertville, Ala. Jackson, Miss. Rogers, Ark. Indianapolis, Ind.
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COLUMBIA SOFT PHOSPHATE
IMMEDIATE DELIVERY
LOW COST
WRITE FOR INFORMATION
Columbia Phosphate Co.
COLUMBIA PHOSPHATE CO. PHOSPHATE PRODUCTS

This Service Center has progressed by hard work and knowledge of local farming.

"Our Purina Service Center's aim is to help farm folks"

—*says Paul M. Wright, President, Farmers Feed & Supply, Inc., Muskogee, Oklahoma*

"We've planned the operations of our Purina Service Center specifically to serve the needs of Muskogee County Agriculture," says Mr. Wright, president of the organization.

Mr. Wright knows what is needed by farmers and ranchers in his market, for he grew up on a cattle and hog farm in southeastern Oklahoma. He knows how to serve those needs, too, for he holds a degree in animal husbandry from Oklahoma State University and served for many years as the agricultural representative of Muskogee Chamber of Commerce.

For many years, Mr. Wright has been a leader in promoting diversification of agriculture. As head of the Purina Service Center, he has played a big part in introducing broilers and laying hens and in the expansion of Grade A dairying. He has built a "Pig Parlor" to demonstrate the modern way of pork production.

In his efforts to aid agriculture in his market, Mr. Wright makes use of Purina Research findings which he presents in farmer meetings. He also takes groups to the Purina Research Farm to see practical applications of agricultural research.

* * * *

Service has proved good salesmanship for Farmers Feed and Supply, Inc. The tonnage has tripled since 1955, the first year of operation. "Purina backs its dealers," says Mr. Wright. "Purina does not offer just products, but planned programs to help farm folks get better results. Purina Salesman Hal Precht works with us as a 'partner,' both in business management and in on-the-farm selling."

Because Mr. Wright knows dog owners and their dogs, Farmers Feed & Supply sells Purina Dog Chow by the carload.

Mrs. Wright follows Purina accounting and money management methods in keeping the firm's books. "The service Purina gives free would cost at least $5,000 a year from other sources," says Mr. Wright.

Egg marketing is one of the services of Farmers Feed and Supply. Here, Alfred McDaniel and Mr. Wright grade eggs to be sold to the many Muskogee folks who prefer eggs from nearby Purina-fed flocks.

PURINA... YOUR PARTNER IN SERVING ANIMAL AGRICULTURE

Importers and Wholesalers
of . . Canadian Screenings

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Board of Trade — Duluth 2, Minn.
Phone: 2-0777 — Teletype DU 16

Members: American Feed Manufacturers Association
The Grain and Feed Dealers National Association

DABNEY - HOOVER SUPPLY CO., INC.
SPECIALISTS IN
ELEVATING, CONVEYING and POWER TRANSMISSION EQUIPMENT
Order Your Hammers and Screens from Us for Speedy Delivery
WHitehall 8-0461 MEMPHIS, TENN. 45 West Virginia Ave.

Alfalfa Processors Elect New Officers

TOLEDO, OHIO — Ray Verhoff, Verhoff Alfalfa Mills, Ottawa, Ohio, was elected president of the Alfalfa Processors Assn., Inc., at its annual mid-winter meeting in Toledo.

Other officers elected were: Don Calvert, Calvert Milling Co., Hoytville, Ohio, vice president, and Joe Cousino, Erie (Mich.) Alfalfa Mills, reelected secretary-treasurer.

Elected to a three year term to the board of directors were: Rolland Turnow, Toledo Alfalfa Mills, Oregon, Ohio; Marvin Rohloff, Rohloff Bros., Graytown, Ohio, and L. J. Schiller, Hayward, Inc., Oak Harbor, Ohio. Current members on the board of directors are: Don Merrick, National Alfalfa Dehydrating & Milling Co., Toledo, Ohio; Lester Lusher, Perrysburg Alfalfa Mills, Perrysburg, Ohio, and Eric Mengering, Farm Bureau Cooperative Assn., Columbus, Ohio.

Two hillbilly draftees were taking their first train ride. A vendor came through the car and each bought a banana, a fruit they had never seen before. One of them had just started to eat when the train went into a tunnel.

"Lem," said the one in a strained voice, "you started to et yours, yet?"

"No," replied Lem.

"Then don't—I started to et mine and I've gone blind."

◆ ◆ ◆

A steno was applying for a new job. On the application blank given her she wrote: "I'm thoroughly familiar with all important phases of office procedure, including bowling, crossword puzzles, coffee breaks, personal letter writing, and collection taking."

◆ ◆ ◆

A school teacher asked the pupils to write a short essay and to choose their own subjects.

A little girl sent in the following paper:

"My subjek is 'Ants.' Ants is two kinds, insects and lady uncles."

"Sometimes they live in holes and sometimes they crawl into the sugar bole, and sometimes they live with their married sisters."

"That is all I know about ants."

◆ ◆ ◆

Farmer's wife (to druggist): "Now, be sure and write plain on them bottles which is for the horse and which is for my husband. I don't want nothin' to happen to that horse before the spring plowin'."

◆ ◆ ◆

Two gents who had been celebrating well but not too wisely were driving home on the broad but not quite broad enough highway. Suddenly the car hit a telephone pole with a terrific jolt, folding up the radiator and hood like an accordion.

"What'sa matter, Joe?" ask the passenger, "didn't you see the pole?"

"What'sa matter, yourself?" responded his companion, rubbing his eyes to shake out the fog. "I seen it all right, but I thought you were driving."

SPENCER KELLOGG AND SONS, INC., BUFFALO 5, N. Y.

Spencer Kellogg Meal Offices are Located at: BELLEVUE 2-8201, BUFFALO CL 5850, CHICAGO FR 2-3437, DECATUR 5365, DES MOINES CH 4-7291, LONG BEACH SP 5-3236, MINNEAPOLIS FE 5-4221, PHILADELPHIA PE 5-8787

YOU CAN TELL...

she's had her
CAFNECTAR
this morning

Cafnectar fortifies milk replacers and calf starter formulas with the sweet milk flavor calves love. Write for sample and information.

FLAVOR CORPORATION OF AMERICA
3037 N. Clark St. • Chicago 14, Illinois

Contests?

NICHOLS 108s Win 'Em!

California Random Sample Test

- Highest eviscerated yield— R. Cornish x Nichols 108 74.7%
- Lowest mortality and condemnation of birds—R. Cornish x Nichols 108 0%

Arkansas Meat Performance Broiler Test

No. 2A — 1958 Highest eviscerated percent of live weight — Vantress x Nichols 108 71%

No. 3A — 1959 Highest score of uniformity (males & females)— Peterson x Nichols 108 91.27

(We'll be glad to show you the complete results of these and many other tests)

Grow-out Profits?

YOU Win 'Em!

Look at this dealer's records (all Nichols ♂)

Grower	A	B	C	D	E	
Started:	29900	3400	3000	10500	13000	59,800
Sold: (Nov. 1959)	29934	3390	3024	10544	13055	59,947
Age:	10 wks 3 days	10 wks 6 days	10 wks 4 days	10 wks 3 days	10 wks 2 days	
Avg. wt:	4.20	4.63	4.33	4.24	4.09	
Feed conv:	2.39	2.54	2.38	2.40	2.29	
Conv. U/wt:	1.81	2.09	1.95	1.84	1.80	

Feed cost per lb. of meat (based on 3 lb. bird & 2.40 feed conversion) —.0869¢

FOR PROFIT AT EVERY LEVEL . . .

FLOCKOWNER • HATCHERY • GROWER • PROCESSOR

BE SURE THE FEMALE SIDE IS NICHOLS

RESEARCH MAKES THEM BETTER — NICHOLS

Nichols Incorporated

EXETER, NEW HAMPSHIRE

WORTH LOOKING INTO

NEW PRODUCTS • NEW SERVICE • NEW LITERATURE

DESCRIPTIONS OF NEW AND IMPROVED PRODUCTS AND SERVICES PROVIDED BY MANUFACTURERS AND SUPPLIERS ARE PRESENTED IN BRIEF FORM. FOR ADDITIONAL INFORMATION, PLEASE USE THE ACCOMPANYING COUPON.

No. 7820—Auger Molasses Mixer

Pacific Molasses Co. reports the availability of information on how to make and install an auger mixer for mixing molasses into feed. The system involves use of a trough and auger, with molasses pumped into the mixing facility. Feed enters a trough which is set at an angle of about 35°. The feed is then augered up through

the trough, and the molasses is introduced into the lower part of the trough through a pipe with a valve to control the molasses flow. The molassesized feed keeps falling back on itself because of the angle of elevation, "thus doing a thorough job of mixing." In the illustrated installation, feed is placed in the trough from a vertical mixer. The trough is 12 ft. long, but the company said it need be only about 8 ft. long. The trough may be covered if desired. Facilities used include a motor, trough and auger, pump, storage tank, meter if desired, heating facilities, pipe, etc. For further information, check No. 7820 on the coupon and mail.

No. 7821—Poultry Management Book

A 25-page book, containing complete details about the problem of coccidiosis, is being offered by Merck & Co., Inc. Called "Coccidiosis and Poultry Management," the book is gaining renewed interest in view of new outbreaks, the company says. For copies of the book, check No. 7821 on the coupon and mail.

No. 7814—Flavor Research

Flavor Corporation of America has announced the availability of additional information on research on flavors from sow milk. The announcement tells of previously reported Iowa State University research indicating that flavors from sow milk promise a solution to problems in getting baby pigs to eat more feed earlier in life. Iowa State researchers have "fractionated" sow milk flavors and studied baby pig eating habits in order to provide additional information that will help solve the problem of palatability in swine rations. It is noted that a Flavor Corp. chemist, Keith Seiler, worked with the Iowa scientists. The Flavor Corp. announcement points out this research and also describes its commercially available flavors for swine feeds, including products for pre-starter and starter feeds and grower and finishing feeds. For additional information on the research projects or on the flavor formulas, check No. 7814 on the coupon and mail.

No. 7817—Snap-in Keylock Bushing

Landers Mill Manufacturing Co. has developed a snap-in keylock bushing which it says eliminates long, costly periods of downtime in pellet mill operations. The bushings fit between the pellet die on any California or Sprout-Waldron die housing, the company says, and are held in place by means of the keylock, which can be tightened to eliminate flex of the die and maintain tight die fit at all times. The bushing takes the wear from the pellet die housing, and can be replaced in 10-15 minutes. The company also is announcing heavy clamps which eliminate studs and driving rims and make it possible to disassemble the feed cone, pellet die and die housing in a matter of minutes. For more information, check No. 7817 on the coupon and mail.

No. 7822—Product Display Stand

Douglas Chemical Co. announces that it will again offer its four color wire rack display stand to the elevators and farm stores that service grain farmers. The stand, designed to

hold a large assortment of Douglas products for use in controlling grain destroying insects and pests, measures 4 ft. high, by 2½ ft. wide. Along with the rack, a complete point-of-purchase display program is offered, the company says. For details, check No. 7822 on the coupon and mail.

No. 7819—Pig Health Product

American Cyanamid Co. has received clearance from the Food & Drug Administration to market a

Send me information on the items marked:

- ☐ No. 7814—Flavor Research
- ☐ No. 7817—Snap-in Keylock Bushing
- ☐ No. 7819—Pig Health Product
- ☐ No. 7820—Auger Molasses Mixer
- ☐ No. 7821—Poultry Management Book
- ☐ No. 7822—Product Display Stand

(PLEASE PRINT OR TYPE) COUPON NOT VALID AFTER 60 DAYS

Others (list numbers) .....

NAME .....

COMPANY .....

ADDRESS .....

SLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS PERMIT No. 2
(Sec. 34.9, P. L. & R.)
MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Feedstuffs

P. O. Box 67

Reader Service Dept. Minneapolis 40, Minn.

NEW! Portable Electric Bag Closing Machine

HERE is a handy little machine that makes bag closing fast, easy, and economical. It is recommended where operations are limited or intermittent and do not justify installation of large, high production machines.

- **LIGHTWEIGHT**—9½ pounds. Carry it anywhere. No installation; requires only an electrical outlet.
- **POWERFUL**—Exclusive top and bottom feed for greater power and production. Direct drive motor with thumb control button.
- **VERSATILE**—Closes bags made of cotton, burlap, jute, multiwall paper, laminated paper. Produces two-thread stitch Type 401, or can be furnished to produce single-thread chain stitch Type 101.
- **SAFE**—Anyone can operate it. No special training required. Can be obtained with overhead suspension. Also, can be supplied with pedestal bracket. Send for descriptive literature.

Union Special® MACHINE COMPANY

Originator of Filled Bag Closing Machines

413 North Franklin Street Chicago 10, Illinois

special formula of Aureomycin chlortetracycline in oil for oral use with baby pigs. It will be marketed under the trade name of Aureomycin Pigdoser and was developed for the prevention and treatment of bacterial scours and pneumonia in suckling pigs. It is packed in a plastic disposable syringe containing 10 doses. The dosage is marked on the plunger which enables users to place 1 cc of the solution directly into the mouth of the pig. The antibiotic sticks to the tongue and does not run out of the mouth or into the lungs. An introductory offer of the product is being made through March 31. The promotion combines the product with Pigdex Injectable Iron. Dealers who purchase the pack containing five 10-dose vials in units of six of the Pigdex, will also receive six syringes of the Pigdoser in a combination package. A similar offer is made with Pigdex in 50-dose vials. Both offers are packaged in a colorful, hard-sell counter display unit, the company says. For more information, check No. 7819 on the coupon and mail.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number of the coupon and forwarding it to Feedstuffs.

No. 7787—Crop dryers, Lennox Industries, Inc.

No. 7788—Pole-type brooder building, E. G. Clinton Co.

No. 7789—Cut-off system, Howe Scale Co.

No. 7790—Container system booklet, Fruehauf Trailer Co.

No. 7791—Mill planning booklet, Myers-Sherman Co.

No. 7792—Cattle feed fortifier, Dawes Laboratories, Inc.

No. 7793—Antibiotic as silage preservative, Commercial Solvents Corp.

No. 7794 — Financing plan, Daffin Manufacturing Co.

No. 7795—Egg cartons, Tobias Enterprises.

No. 7796—Merchandising program, National Vitamin Products Co.

No. 7797 — Poultry disease treatment, Abbott Laboratories.

No. 7798—Proportioning pump bulletin, B-I-F Industries.

No. 7799—Bulk feed body, North American Manufacturing Co.

No. 7800 — Hinged side panel, Sprout, Waldron & Co., Inc.

No. 7801—Bulk truck service, Productive Acres Manufacturing Co., Inc.

No. 7802—Plastic shipping sack, Owens-Illinois Glass Co.

No. 7803—Weighing system brochure, Howe Scale Co.

No. 7804—Square hole nests, James Manufacturing Co.

No. 7805—Antibiotic supplement, S. B. Penick & Co.

No. 7806—Super concentrate plan, Ultra-Life Laboratories.

No. 7807—Copper sulfate block, Peebles' Specialty Products, Western Condensing Co.

No. 7808—Cob bin door, Shelby Manufacturing Co.

No. 7809—Animal health promotion, Chas. Pfizer & Co., Inc.

No. 7810—Water-tube steam boilers, Nebraska Boiler Co., Inc.

No. 7811—Static electricity neutralizer, Statikil, Inc.

No. 7812—Tag handling machine, K&S Metal Products Co.

No. 7813—Swivel-piler, Stephens-Adamson.

No. 7815 — Sifter data, Sprout, Waldron & Co., Inc.

SUNSET FEED & GRAIN CO., INC.

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DISTRIBUTORS OF

KELLOGG HOMINY FEED — HUBINGER GLUTEN FEED
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SODIUM BENTONITE
PACIFIC MOLASSES — PILOT OYSTER SHELLS
DU PONT'S "TWO-SIXTY-TWO" FEED COMPOUND
STONEMO GRANITE GRIT — CALF MANNA
NOPCO FEED SUPPLEMENTS
PROTAMONE — TAKAMINE ENZYMES
PILOT SECOND CLEAR FLOUR

INQUIRIES APPRECIATED

Strong Scott

"THE STRONG-SCOTT QUICK-CHANGE HAMMERMILL SOLVED ALL OUR GRINDING PROBLEMS..."

says Alvin Berg, manager of Farmers Elevator Co-Operative, Green Valley, Wisconsin

A new office and store are adjacent to the modern mill and elevator. The Co-Op also includes a lumber yard and locker plant.

Alvin Berg manages the entire Co-Op, presently employing seven people.

"When we offer custom grinding, that's just what it is," says Al. "We change grind size almost every batch. Without the quick-change on our Strong-Scott Hammermill, we just couldn't operate as we do. In fact," added Al, "our Hammermill has been the answer to turning out high capacity grinding when you really need it." Contractor at Farmers Elevator Co-Op was Arnold Schroeder.

"As for custom mixing, we give our customers fast service and a quality product, thanks to our Strong-Scott 1-ton and 2-ton Triple Action Mixers," added Al.

With just a pull of the handle, any one of the five special type screens for the Hammermill are dropped into place and ready to go—it's just that easy and fast.

Walter Wendt, mill employee at Green Valley, adds just the right amount of molasses to feed in the Triple Action Mixer.

Hinged doors on the bottom of the Strong-Scott Triple Action Mixer provide easy access for cleaning.

THE **BIG YEAR** FOR NEW EQUIPMENT

The Strong Scott Mfg. Co.
451 Taft Street N. E.
Minneapolis 13, Minnesota

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PLEASE SEND ME INFORMATION ON:
☐ STRONG-SCOTT HAMMERMILL
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COMPANY_____
ADDRESS_____
CITY_____ STATE_____
Dept. GV-60

Use Your Own Salt and Calcium with Herman Nagel's **Formula B**
...to Supply *Every Needed Mineral*
in a form so soluble "it melts on your tongue."

The HERMAN NAGEL Co.
53 W. Jackson Blvd.
Chicago 4, Illinois

NEW MEXICO

(Continued from page 16)

expense of customers. Our first duty is to help them."

Some signs of growth can be ascertained by the expansion program of the last two years. An extra feed room was added along with a drive-in loading dock which gets the trucks and pick-ups back off the street, new seed cleaning equipment, a bag conveyor loader and other equipment. In the front part of the store, several lines of farm supplies have been added.

Reading Nook

One innovation for the convenience of customers is a reading nook, complete with couch and a rack filled with numerous magazines. Here feeders can sit down and discuss problems or wives can wait while their husbands transact business.

"That customer nook is very popular," said W. H. "We try to make people feel at home. We also have soft drink machines, water fountains, cigarette and candy machines and other things which encourage people to linger awhile."

The partners had a large western mural painted on a wall. "We have tried to make the store a place where the entire family may come and relax," say the Bullocks.

Recently the Bullocks became dealers for a nationally known brand of feed. But at the same time they will continue to sell a New Mexico manufactured feed.

"This is the first time this sort of thing has happened, at least in this area," said W. H., "so I suppose both companies have some faith in our store."

The Bullocks are well known in southwestern feed and livestock circles. W. H. is vice president of the New Mexico Feed Dealers' Assn., and both are civic leaders in Artesia.

Their store is one of the oldest in the southwest part of the state, having been founded in 1912 by their father, E. B. Bullock. He is now retired at the age of 85. His two sons have succeeded in adding new growth to the firm each year.

ADM Net Earnings Drop During 1959 Six-Month Period

MINNEAPOLIS — Archer-Daniels-Midland Co. has announced net earnings of $1,971,165 for the six months ended Dec. 31, 1959.

This was equal to $1.23 a share on the common stock and compared with $3,089,245, or $1.93 a share, for the same six months a year ago. The period is the first half of the firm's fiscal year.

Earnings for the second quarter were $1,113,663, or 70¢ a share, compared with $1,471,064, or 92¢ a share, in the same October-December period a year ago.

The directors declared a dividend of 50¢ a share, payable March 1 to stockholders of record Feb. 19. This is the 134th cash payment and its 114th consecutive quarterly dividend. There are 1,597,696 shares of common stock outstanding.

John H. Daniels, president, attributed the earnings decline to lower profits on soybeans, flaxseed, grain and flour operations. Although soybean processing margins improved somewhat toward the end of 1959, the gain was not as much as anticipated earlier, Mr. Daniels said.

"Reduced returns in the agricultural products area were partially offset by an increase in earnings from ADM's growing line of chemicals, although the prolonged steel strike retarded the rate of profit growth for these products," he said.

The ADM president said that with production in all industries now back to a high level, earnings should improve during the last half of the fiscal year.

The long range outlook for the firm is encouraging, he concluded, because of anticipated earnings from the expanding operations of new divisions, new products from intensified research and a revised and strengthened organization.

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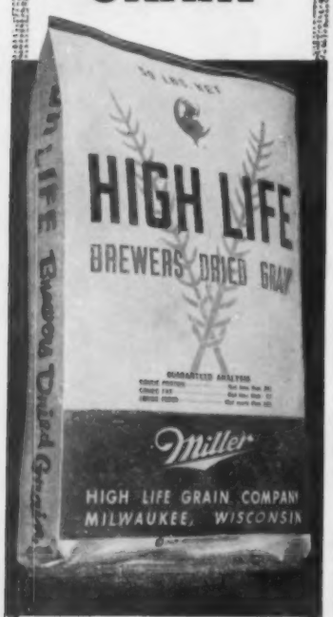

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A WEEKLY NEWSPAPER
For the Feed Manufacturer, Feed Jobber
Feed Broker and Feed Dealer

Index for January, 1960
Vol. 32 Nos. 1-5

ADDITIVES:
American Farm Bureau Federation ....Jan. 2—p 60
Feed Pelleting and Its Effects on Micro-Ingredients....Jan. 9—p 18
Human Health Aspects of Ag Chemicals 'Explored' at Minnesota Session ....Jan. 9—p 1
Indiana Grain & Feed Dealers Assn. ....Jan. 30—p 6
National Turkey Federation ....Jan. 9—p 1
Problems in Use of Agricultural Chemicals in Production of Livestock and Livestock Products ....Jan. 9—p 14
USDA Statement Endorses 'Safe' Chemicals ....Jan. 16—p 1

ALFALFA:
Alfalfa in Beef Cattle Feeding ....Jan. 30—p 20
Alfalfa Carotene as Vitamin A Source for Poultry ....Jan. 30—p 21
Alfalfa as Source of Vitamin A Studied ....Jan. 23—p 14
Automation in Alfalfa ....Jan. 30—p 17
Dehydrated Alfalfa in Confinement Feeding of Swine...Jan. 30—p 19
Estrogenic Activity of Forage Crops ....Jan. 30—p 18
Kansas Formula Feed Conference ....Jan. 30—p 50
Reports on Current Alfalfa Research ....Jan. 30—p 25

ANTIBIOTICS:
Antibiotic Improves Lamb Test Results ....Jan. 16—p 101
Antibiotic Product for Silage ....Jan. 30—p 4
Recent Advances in Sheep Nutrition ....Jan. 2—p 38
Tests of Creep Rations for Lambs ....Jan. 2—p 79

ARSENICALS:
Lamb Test Results ....Jan. 16—p 101

ASSOCIATIONS:
American Farm Bureau Federation (Annual Meeting) ....Jan. 2—pp 57 & 60
American Feed Manufacturers Assn.
(Publishes State Feed Law Digest) ....Jan. 16—p 7
(Publishes Purchasing Guides) ....Jan. 16—p 44
(Protests FDA Proposal on Trace Minerals) ....Jan. 30—p 1
Animal Health Institute (Health Event Set) ....Jan. 2—p 52
(Calls for Research Award Nominations) ....Jan. 16—p 15
California Egg Council (Merger with PENB) ....Jan. 2—p 51
California Hay, Grain & Feed Dealers Assn. (Resignation) ....Jan. 2—p 6
Chicago Feed Club (Officers) ....Jan. 23—p 81
Farmers Elevator Assn. of South Dakota (Election) ....Jan. 2—p 83
Grain & Feed Dealers National Assn. (Emergency Feed Program) ....Jan. 2—p 20
Illinois Feed Assn. (Honors Harrod) ....Jan. 2—p 16
Indiana Grain & Feed Dealers Assn. (Convention) ....Jan. 23—p 4; Jan. 30—p 6
Institute of American Poultry Industries (Appointment)...Jan. 16—p 94
Kansas City Feed Club (Meeting) ....Jan. 16—p 4
Kansas Feed Mfrs. Assn. (Raise Memorial Fund) ....Jan. 23—p 7
Memphis Board of Trade Clearing Assn. (Elections) ....Jan. 2—p 79; Jan. 16—p 72
National Broiler Council (Broiler Promotion Program)...Jan. 30—p 1
(Promoting Broilers During January) ....Jan. 16—p 100
(Sets Special Problems Session) ....Jan. 23—p 6
National Feed Ingredients Assn. (Protests FDA Proposal) ....Jan. 30—p 1
National Turkey Federation (Convention) ....Jan. 9—p 6
(Meeting) ....Jan. 9—p 1
New Hampshire Poultry Growers Assn. (Meeting) ....Jan. 2—p 10
Northwest Retail Feed Assn. (Convention) ....Jan. 23—p 1
Omaha Feed Club (Meeting) ....Jan. 23—p 6
Ontario Retail Feed Dealers Assn. (Bulletin) ....Jan. 16—p 16
Pennsylvania Millers and Feed Dealers Assn. (Feeder Pig Sales) ....Jan. 16—p 16
(Favors Private Storage) ....Jan. 23—p 8
Poultry & Egg National Board (Merger with California Council) ....Jan. 2—p 51
(New Products Unit) ....Jan. 16—p 34
Southeastern Poultry & Egg Assn. (Meeting) ....Jan. 30—p 1
Texas Egg Council (New Association) ....Jan. 9—p 68

AUTHORS:
Allen, W. S.
Planning a Grain Drying System ....Jan. 16—p 26
Ames, Dr. Stanley R.
Technical Projects Committee and Its Program ....Jan. 9—p 38
Atkinson, Dr. J. H.
Four Types of Hog Finishing Contracts in Indiana....Jan. 30—p 82
Bentley, Orville G.
Alfalfa in Beef Cattle Feeding ....Jan. 30—p 20
Blair, Jess
Broiler Contractor Finds Farm Store More Profitable..Jan. 2—p 18
McMillen Operates Bulk Loading Plant ....Jan. 16—p 58
Chrisman, Joseph
Automation in Alfalfa ....Jan. 30—p 17
Coleman, J. P.
Four Types of Hog Finishing Contracts in Indiana....Jan. 30—p 82
Collins, Bernard
Midwest Farmer Can Compete Against Integration, 'Bigness' ....Jan. 9—p 50
Conrad, Dr. J. H.
The Role of Dehydrated Alfalfa in Confinement Feeding of Swine ....Jan. 30—p 19
Couch, J. R.
Poultry Health as Influenced by Management Under Conditions of Intensified Production ....Jan. 16—p 20
Davies, R. E.
Poultry Health as Influenced by Management Under Conditions of Intensified Production ....Jan. 16—p 20
Embry, Lawrence B.
Alfalfa in Beef Cattle Feeding ....Jan. 30—p 20
Frost, Douglas V.
Comparison of Vitamin K_1 and Menadione Sodium Bisulfite Complex as Standards in Chick Diets Suggested for Vitamin K Assay ....Jan. 23—p 34
Preparation for Vitamin K Assay of Feeds ....Jan. 16—p 48
Griminger, Dr. Paul
Standards and Diets for Vitamin K Research ....Jan. 16—p 48
Haldeman, Robert C.
Grain Transportation Patterns Shift; Rails Cut Rates to Meet Competition ....Jan. 16—p 88
Hopkins, D. T.
Studies on Vitamin K Assay Diets ....Jan. 9—p 38
Kelley, James F.
Grain Drier Operation ....Jan. 16—p 26
Kitts, Dr. Warren D.
Estrogenic Activity of Forage Crops ....Jan. 30—p 18
Lance, Phil
Pennsylvania Feed Firm Enters Contracting to Cut Credit Risk ....Jan. 23—p 46
Larrick, George P.
Problems in Use of Agricultural Chemicals in Production of Livestock and Livestock Products ....Jan. 9—p 14
Meyer, Dr. J. H.
Some Ideas on Feeding Pelleted Rations to Ruminants ....Jan. 23—p 26
Nelson, Al P.
Feed Man-Veterinarian Cooperation ....Jan. 9—p 60
New Custom Mill Grinds on Appointment Basis ....Jan. 9—p 30
New Feed Plant in Illinois Specializes in Pelleted Rations for Beef Cattle and Swine ....Jan. 16—p 18
New Services Always Have Plus Sales Appeal ....Jan. 23—p 62
Pennsylvania Feed Dealer Has 5,200 Cage Layer Operation ....Jan. 30—p 30
Poultry Contracts Account for 60% of Firm's Feed Output ....Jan. 2—p 70
Norris, Dr. L. C.
Studies on Vitamin K Assay Diets ....Jan. 9—p 38
Parrish, Dr. D. B.
Alfalfa Carotene as Vitamin A Source for Poultry ..Jan. 30—p 21
Perdue, Henry S.
Comparison of Vitamin K_1 and Menadione Sodium Bisulfite Complex as Standards in Chick Diets Suggested for Vitamin K Assay ....Jan. 23—p 34
Pudelkiewicz, Dr. W. J.
A Report Preparatory to Choosing of ANRC Vitamin E Standards ....Jan. 30—p 66
Roy, Dr. Paul
Impact of Increasing Feed Grain Production and Feeding Operations in the Southwest ....Jan. 30—p 44
Sanford, Dr. P. E.
Alfalfa Carotene as Vitamin A Source for Poultry ....Jan. 30—p 21
Scott, Dr. M. L.
Studies on Vitamin K Assay Diets ....Jan. 9—p 38
Wornick, Robert C.
Feed Pelleting and Its Effect on Micro-Ingredients...Jan. 9—p 18

BARLEY:
Barley Source of Both Grain and Roughage in Tests...Jan. 16—p 90

BOARDS OF TRADE:
Boston Grain & Flour Exchange (Honors C. D. Worthing) ..Jan. 2—p 85
Chicago Board of Trade (Election) ....Jan. 30—p 73
Cincinnati Board of Trade (Officers) ....Jan. 2—p 4
Kansas City Board of Trade (Officers) ....Jan. 23—p 82
Louisville Board of Trade (Elections) ....Jan. 30—p 95
Memphis Board of Trade (Tie for Vice President) ....Jan. 16—p 4
Merchants Exchange of St. Louis (Nomination) ....Jan. 2—p 7
Toledo Board of Trade (Election) ....Jan. 23—p 48

BROILER FEEDING:
Delmarva Regional Poultry Meeting ....Jan. 16—p 6

BULK HANDLING:
McMillen Operates Bulk Loading Plant ....Jan. 16—p 58

CANADA:
Canada Nixes Late '59 Egg Payment Help ....Jan. 30—p 95
Canadian Farm Hog Numbers Decline ....Jan. 30—p 10
Orderly Marketing of Canadian Hogs Urged ....Jan. 2—p 6
Shipments of Feeds in Canada Increase ....Jan. 2—p 85

CATTLE FEEDING:
Alfalfa in Beef Cattle Feeding ....Jan. 30—p 20
Barley Source of Both Grain and Roughage in Tests....Jan. 16—p 90
Kansas Formula Feed Conference ....Jan. 30—p 50
Mississippi Research on Cattle Management and Feeding Reviewed ....Jan. 9—p 74
Northwest Retail Feed Assn. ....Jan. 23—p 1
Reports on Beef Cattle Research Issued by Ohio Station..Jan. 16—p 68
Some Ideas on Feeding Pelleted Rations to Ruminants..Jan. 23—p 26
Steers Gain More on Pasture Than in Drylot ....Jan. 2—p 80

CHEMOBIOTIC:
Beef Cattle Research Told at S. D. Meeting....Jan. 16—p 75
Stilbestrol, Dynafac Help Increase Gains ....Jan. 2—p 53
Tests of Creep Rations for Lambs ....Jan. 2—p 79

COMPANIES:
Aeroglide Corp. (Kansas Plant) ....Jan. 23—p 82
Alabama Flour Mills (Appointment) ....Jan. 16—p 107
Allied Mills, Inc. (Retirement) ....Jan. 16—p 72
(Appointments) ....Jan. 23—p 14
Amburgo Co., Inc. (Meeting) ....Jan. 2—p 14
American Cyanamid Co. (Winners Announced) ....Jan. 30—p 65
(Aureomycin Crumbles Promotion) ....Jan. 30—p 93
Arbor Acres (Appointment) ....Jan. 23—p 31
Archer-Daniels-Midland Co. (Appointments) ....Jan. 2—pp 4 & 36
Arenal Farms Feed Mill (Enters Contracting) ....Jan. 23—p 46
Arnold Elevator Mills (Sold) ....Jan. 2—p 44
Babcock Poultry Farm (Appointments) ....Jan. 16—pp 34 & 83
Beacon Milling Co. (Appointment) ....Jan. 9—p 7; Jan. 16—p 58
Bemis Bro. Bag Co. (Personnel Transfer) ....Jan. 2—p 88
B-I-F Industries, Inc. (Appointments) ....Jan. 2—p 68
Blatchford Calf Meal Co. (Election) ....Jan. 30—p 12
Brown, Jeff D., & Co., Inc. (Appointment) ....Jan. 9—p 57
Burrows Equipment Co. (Officers) ....Jan. 2—p 85
Burrus Feed Mills (Sales Meeting) ....Jan. 2—p 77
Cargill, Inc. (Plans Building) ....Jan. 2—p 7
Carnation Co. (Friskies Ad Campaign) ....Jan. 30—p 65
Central Soya Co., Inc. (Promotions) ....Jan. 2—p 4
Chattanooga Boiler & Tank Co. (Cancels Sales Contract) ....Jan. 2—p 6
Chemell, L. A., Co. (Suits Against Chemell Set) ....Jan. 9—p 7
Chemell, L. A., Co. (Bankruptcy Case Adjourned) ....Jan. 16—p 4
Clute, Francis H., & Son (New Pelleting Unit) ....Jan. 2—p 8
Colorado Milling & Elevator Co. (Election) ....Jan. 9—p 67
Commercial Solvents Corp. (Antibiotic for Silage) ....Jan. 30—p 34
(Meeting) ....Jan. 2—p 15
Consumers Cooperative Assn. (Appointment) ....Jan. 16—p 39
Cooperative G.L.F. Exchange, Inc. (New Feeds) ....Jan. 2—p 8
(Package Changes) ....Jan. 2—p 50
Corn Products Co. (Drug for Dog Food) ....Jan. 16—p 8
Daffin Mfg. Co. (Appointments) ....Jan. 23—p 7; Jan. 16—p 99
(Depots in West) ....Jan. 16—p 76
Dakota Salt & Chemical Co. (Production Date) ....Jan. 30—p 7
Deseret Farms (Feeding Expands) ....Jan. 2—p 27
Doane Agricultural Service, Inc. (Election) ....Jan. 9—p 29
Dodgen Industries (Purchase Plan) ....Jan. 30—p 16
Dorn & Mitchell Laboratories, Inc. (Vaccine Plant) ....Jan. 16—p 16
Dow Chemical Co. (Sales Report) ....Jan. 23—p 7
Dun & Bradstreet, Inc. (Requests Statements) ....Jan. 9—p 78
Eastern States Farmers Exchange (Appointment) ....Jan. 16—p 10
Ewing, Ray, Co. (Appointments) ....Jan. 9—p 67; Jan. 16—p 98
Farm Bureau Services, Inc. (Sales Report) ....Jan. 9—p 68
Farmers Union Marketing Assn. (Fire) ....Jan. 23—p 7
Feed Service Corp. (Appointment) ....Jan. 23—p 74
(Liquid Feeding Film) ....Jan. 9—p 58
Fisher Flouring Mills (Elevator Restored) ....Jan. 2—p 4
Foxbilt, Inc. (Acquisition Planned by Morrell) ....Jan. 16—p 1
General Mills, Inc. (Appointments) ....Jan. 2—p 4; Jan. 16—p 11
(Broiler Contracts in Texas) ....Jan. 2—p 85
(Resignation) ....Jan. 16—p 4
(Sales Report) ....Jan. 16—p 7
Grace, W. R., & Co. (Sales Agent) ....Jan. 16—p 89
Graham Brothers, Inc. (Poultry Contracts) ....Jan. 2—p 70
Hales & Hunter Co. (Election) ....Jan. 23—p 10
(Modernization) ....Jan. 23—p 75
Heiman & Sons (Business Sold) ....Jan. 2—p 44
Hercules Powder Co. (Appointment) ....Jan. 9—p 63
Hill, Arthur R., Co., Inc. (Ingredient Trading) ....Jan. 2—p 57
Hoffmann-La Roche, Inc. (Appointment) ....Jan. 23—p 82
Hoke Bair Co. (Cage Layer Operation) ....Jan. 30—p 30
Honeggers' & Co. (Belgians' Visit) ....Jan. 30—p 73
Howes, S., Co., Inc. (Appointments) ....Jan. 23—p 40
Hubbard Milling Co. (Summer Orientation Plan) ....Jan. 9—p 12
International Minerals & Chemical Corp. (Promotion)...Jan. 16—p 10
Kellogg, Spencer, & Sons, Inc. (Appointment) ....Jan. 30—p 14
(Sales Report) ....Jan. 9—p 4
Keltgen Mill & Feed (Sales Promotion) ....Jan. 23—p 62
Koos, N. S., Co. (Promotion Techniques) ....Jan. 16—p 60
LaCrosse Trailer Co. (Pelleting Unit) ....Jan. 2—p 8
Mann, W. P., Sales Co. (Appointment) ....Jan. 2—p 45
Mar-Jac Poultry Co. (Plant Shutdown) ....Jan. 23—p 6
Martin Bros. (New Feed Plant) ....Jan. 16—p 18
Master Feed & Seed Co., Inc. (Bulk Station) ....Jan. 30—p 36
Mauldin Feed & Seed Co. (Broiler Contractor) ....Jan. 2—p 18
McMillen Feed Mills (Automated Pelleting System)....Jan. 2—p 34
(Bulk Loading Plant) ....Jan. 16—p 58
(Expands Research Facilities) ....Jan. 16—p 6
(Promotions) ....Jan. 30—p 10
Merck & Co. (Appointments) ....Jan. 23—p 48; Jan. 16—p 7
(Mastitis Ointment) ....Jan. 16—p 46

Midland Cooperative, Inc. (Expansion Plans) ....Jan. 16—p 39
Montana Flour Mills (Telecast) ....Jan. 2—p 88
Morrell, John, & Co. (Foxbilt Acquisition Planned) ...Jan. 16—p 1
National Alfalfa Dehydrating & Milling Co. (Package Design) ....Jan. 23—p 70
Naturich Mills (Announces Feedlot) ....Jan. 2—p 1
Nopco Chemical Co. (Appointments) ...Jan. 16—p 99; Jan. 30—p 99 (Executive Changes) ....Jan. 16—p 15
Norris Cattle Co. (Feeding) ....Jan. 2—p 27
Nuleid Farmers Assn. (Fryer Ration) ....Jan. 16—p 17
Nutrena Mills, Inc. (Appointments) ....Jan. 9—p 49
Ogilvie Flour Mills Co., Ltd. (Appointment) ....Jan. 2—p 54
Paymaster Feed Mills (Integration Expansion) ....Jan. 9—p 6
Pay Way Feed Mills (Outstanding Salesman) ....Jan. 30—p 93
Peavey Feed Mills (N. D. Construction) ....Jan. 16—p 93
Pfizer, Chas., & Co., Inc. (Animal Health Poster) ....Jan. 23—p 71
Pillsbury Co. (Salesmen Honored) ....Jan. 2—p 7 (Sales Report) ....Jan. 16—p 10
Poultry Producers of Central California (Changes Name) ..Jan. 16—p 39 (Construction) ....Jan. 2—p 46
Prater Pulverizer Co. (Contest for Feed Millers) ....Jan. 16—p 12 (Michigan Representative) ....Jan. 23—p 60 (Sales Meeting) ....Jan. 16—p 96
Productive Acres Manufacturing Co. (Consolidates Manufacturing) ....Jan. 2—p 4
Putney Hatchery (Fire) ....Jan. 2—p 23
Quaker Oats Co. ('Controlled Energy' Research) ....Jan. 30—p 8
Ralston Purina Co. (Appointment) ....Jan. 16—p 40 (Poultry Ads) ....Jan. 2—p 6 (Sales Report) ....Jan. 9—p 4
River Grain Terminals (Expansion) ....Jan. 2—p 8
Rocky Mountain Phosphates, Inc. (New Company) ....Jan. 2—p 11 (Plant to Open) ....Jan. 30—p 6
St. Regis Paper Co. (Appointments) ....Jan. 9—p 15
Salsbury's, Dr., Laboratories (Appointment) ....Jan. 30—p 81
Scio Mill & Elevator Co. (Californians Buy Mill) ....Jan. 23—p 4
Simonsen Manufacturing Co. (Appointment) ....Jan. 9—p 63
Southern States Feed Service (Custom Mill) ....Jan. 9—p 30
Staley Farm Supply (New Mill) ....Jan. 30—p 38
Strong-Scott Manufacturing Co. (Appointment) ....Jan. 16—p 7
Sutorbilt Corp. (Appointment) ....Jan. 16—p 24
Tully, W. C., Co. (To Resume Consulting) ....Jan. 16—p 64
U. S. Industrial Chemicals Co. (Liquid Feeding Film) ..Jan. 9—p 58
Walnut Grove Products Co., Inc. (Catron Accepts Post) ..Jan. 9—p 1
Weir, Albert, Co. (Oyster Shell Plant) ....Jan. 23—p 7
West Virginia Pulp & Paper Co. (Dallas Office Closed) ..Jan. 23—p 64 (Sales Report) ....Jan. 30—p 80
White, Bob, & Co. (Moves to Minneapolis) ....Jan. 16—p 4
Wirthmore Feeds, Inc. (Display Contest) ....Jan. 9—p 34 (Movie) ....Jan. 30—p 10 (Promotion) ....Jan. 9—p 79

CONFERENCES:
Beef Research Day ....Jan. 16—p 75
Delmarva Regional Poultry Meeting ....Jan. 16—p 6
Farm Supply Credit Men's Conference ....Jan. 30—p 1
Kansas Formula Feed Conference ....Jan. 16—p 44; Jan. 30—p 50
Missouri Sheep Day ....Jan. 9—p 56

CONSTRUCTION:
Flanders Feed Mill (Tifton, Ga.) ....Jan. 2—p 79
Great Western Malting Co. (Vancouver, Wash.) ....Jan. 2—p 80
Poultry Producers of Central California (Turlock, Cal.) ..Jan. 2—p 66

CONSUMPTION & PRODUCTION:
Domestic Use, Exports of Feedstuffs at High Levels....Jan. 16—p 8
1958 Feed Sales in Missouri ....Jan. 2—p 32

CORN:
Up or Down ....Jan. 30—p 16

COTTONSEED:
Mississippi Research on Cattle Feeding ....Jan. 9—p 74

COW POOLS:
Eastern Ontario Farmers Planning Cow Pool ....Jan. 9—p 79

CREDIT & FINANCING:
AFMA and NEPPCO to Discuss Financing, Contracting..Jan. 9—p 1
Indiana Grain & Feed Dealers Assn. ....Jan. 30—p 6
Ontario Retail Feed Dealers Assn. ....Jan. 16—p 16
Pinch in Feed Credit at Retail Level ....Jan. 30—p 1
Southeastern Poultry & Egg Assn. ....Jan. 30—p 1

CROTALARIA:
Seed of Crotalaria Capable of Cutting Egg Production..Jan. 16—p 99

DAIRY FEEDING:
Good Concentrate and Hay Ration ....Jan. 2—p 14
Milk From Cows on Pure Brome May Get 'Unclean' Flavor ....Jan. 2—p 78
More Feedings Up Gains in Experiments ....Jan. 9—p 63
Underfeeding Dairy Heifers as Harmful as Overfeeding..Jan. 2—p 14

DIELDRIN:
Putting Research to Work ....Jan. 30—p 56

DISASTERS:
Farmers Union Marketing Assn. (Denver), Fire ....Jan. 2—p 57
Putney Hatchery (Dahlonega, Ga.), Fire ....Jan. 2—p 23

DISEASES:
Delmarva Poultry Meeting & Short Course ....Jan. 16—p 6
Extra Salt Reduces 'Water Belly' Losses ....Jan. 23—p 32
Kansas Formula Feed Conference ....Jan. 30—p 50
National Turkey Federation ....Jan. 9—p 1
Reports on Beef Cattle Research Issued by Ohio Station..Jan. 16—p 68
Respiratory Diseases Strike Broiler Flocks ....Jan. 23—p 56

EDUCATION:
Arizona Poultry Staff Appointments ....Jan. 2—p 11
Food Residue Group Named in Vermont ....Jan. 2—p 51
Iowa Names Poultry Department Head ....Jan. 23—p 82

ENERGY:
Recent 'Controlled Energy' Feeding Research Related...Jan. 30—p 8

ENZYMES:
Beef Research Day ....Jan. 16—p 75
Cattle Research at Ohio Agricultural Experiment Station..Jan. 16—p 68

FATS:
Putting Research to Work ....Jan. 9—p 62
Test Added Tallow in Swine Rations ....Jan. 9—p 10

FEED INDUSTRY:
Parlors Suffer in South ....Jan. 9—p 75

FEED SUPPLIES:
Farm Feed Grain Stocks Up 6% ....Jan. 23—p 11
October's Fish Meal Production Up ....Jan. 16—p 72
Range Condition in West ....Jan. 23—p 16

FISH PRODUCTS:
Feed Potential Viewed for Lake's Trash Fish....Jan. 2—p 23

FORAGE TESTING:
Massachusetts Forage Testing Program Set ....Jan. 9—p 53
Washington Initiates Forage Testing Program ....Jan. 16—p 14

FREIGHT RATES:
Grain Transportation Patterns Shift; Rails Cut Rates to Meet Competition ....Jan. 16—p 80
Reduction in Rail Rates on Eastbound Grains Sought by Industry in East ....Jan. 23—p 19

GOVERNMENT AID:
Grain & Feed Dealers National Assn. ....Jan. 2—p 20

GRAIN BANK:
Indiana Grain & Feed Dealers Assn. ....Jan. 30—p 6

GRAIN DRYING:
Grain Drier Operation ....Jan. 16—p 26
Planning a Grain Drying System ....Jan. 16—p 26

GRAIN STORAGE:
Displeasure Over Suggested Storage Pact Changes ....Jan. 9—p 1
'Industry Must Face USSA Facts' ....Jan. 23—p 8
Official Forecasts Lower Rates ....Jan. 30—p 1
Pennsylvania Millers & Feed Dealers Assn. ....Jan. 23—p 8
Proposed Changes in Grain Storage Agreement ....Jan. 2—p 6
Renegotiation Issue Raised in Senate Hearing ....Jan. 16—p 1
Senator Symington Comments on USDA Statement ....Jan. 23—p 1
Statements Issued on Grain Storage Problem ....Jan. 23—p 8
Wide Range of Grain Warehousing Costs Indicated ....Jan. 30—p 7

GRAIN TRADE:
Soybeans Lead All Commodities in 1959 Trading ....Jan. 16—p 17

HORMONES:
Aim of Research Is to Stimulate Udder Growth, Milk Secretion by Feeding Hormones ....Jan. 30—p 88
Beef Research Day ....Jan. 16—p 75
Estrogenic Activity of Forage Crops ....Jan. 30—p 18
Mississippi Research on Cattle Feeding ....Jan. 9—p 74
Missouri Sheep Day ....Jan. 9—p 56
Omaha Feed Club ....Jan. 23—p 6
Proposal for Delaney Clause Changes ....Jan. 30—p 1
Recent Advances in Sheep Nutrition ....Jan. 2—p 38
Reports on Beef Cattle Research Issued by Ohio Station..Jan. 16—p 68
Stilbestrol, Dynafac Help Increase Gains ....Jan. 2—p 63
Stilbestrol No Aid to Milk Output in Tests ....Jan. 2—p 31
Stilbestrol Use in Poultry Stopped ....Jan. 2—p 79

HUNDREDWEIGHT:
American Farm Bureau Federation ....Jan. 2—p 60

INSECTICIDES:
Missouri Sheep Day ....Jan. 9—p 56

INTEGRATION & CONTRACT FARMING:
AFMA and NEPPCO Groups to Discuss Contracting ...Jan. 9—p 1
American Farm Bureau Federation ....Jan. 2—p 60
Dairy Trend Toward Partial Integration ....Jan. 2—p 66
Firm Enters Contracting to Cut Credit Risk ....Jan. 23—p 46
Four Types of Hog Finishing Contracts in Indiana ....Jan. 30—p 82
Future of Broiler Integration Noted in Texas Bulletin...Jan. 2—p 36
Integration Hit by Californians ....Jan. 2—p 77
'Lend-Lease' Program for Hogs Started ....Jan. 9—p 72
Midwest Farmer Can Compete Against Integration....Jan. 9—p 50
Ontario Farmers Planning Cow Pool ....Jan. 9—p 79
Parlors Suffer in South ....Jan. 9—p 75
Pennsylvania Dealer Has Cage Layer Operation ....Jan. 30—p 30
Poultry Contracts Account for 60% of Firm's Output...Jan. 2—p 70
Southeastern Poultry & Egg Assn. ....Jan. 30—p 1

LEGISLATION:
Integration Hit by Californians ....Jan. 2—p 77
New Hampshire Poultry Growers Assn. ....Jan. 2—p 10
President's Talk Seen as Having Deflated Effect on Commodities ....Jan. 9—p 1
Proposals for Delaney Clause Changes ....Jan. 30—p 1
Secretary Outlines FDA Views on Delaney Clause ....Jan. 2—p 1

LITERATURE:
New Feeding Booklet ....Jan. 2—p 36

LIVESTOCK INDUSTRY:
Corn Imports, More Hog Feeding in Wisconsin Urged..Jan. 2—p 83
Drylot and Range Feeding Expands in Southeast's Beef Industry ....Jan. 2—p 26
Impact of Increasing Feed Grain Production and Feeding Operations in the Southwest ....Jan. 30—p 44
Kansans Urged to Up Hog Production ....Jan. 2—p 53
Lamb Grading Service Suspension Withheld ....Jan. 9—p 16
Optimistic 1960 Outlook for Dairy Farmers ....Jan. 2—p 1
Parlors Suffer in South; Mixed Hog Feed Sales Down...Jan. 9—p 75
Pennsylvania Millers & Feed Dealers Assn. ....Jan. 16—p 16
Some Hog Farmers Mixing Own Feeds ....Jan. 9—p 64

LIVESTOCK NUMBERS:
Capital Comment ....Jan. 2—p 6
Cattle and Calves on Feed Show 9% Climb ....Jan. 23—p 1
Cattle Shipments Into Corn Belt Increase ....Jan. 9—p 16
Hog Price Levels Above Year Earlier Predicted ....Jan. 23—p 10
Stronger Hog Prices in Outlook ....Jan. 2—p 1
Up or Down ....Jan. 16—p 74
USDA Reports 7% Drop in Sheep, Lambs on Feed ....Jan. 16—p 7
USDA Sees Fed Cattle Prices Below 1959 Levels ....Jan. 23—p 12

MANAGEMENT—BUSINESS:
Northwest Retail Feed Assn. ....Jan. 23—p 1
Southeastern Poultry & Egg Assn. ....Jan. 30—p 1
Summer Orientation Plan for Prospective Workers ....Jan. 9—p 12

MANAGEMENT—LIVESTOCK & POULTRY:
Automatic Hog Feeding System to Weigh Feed ....Jan. 23—p 32
Delmarva Regional Poultry Meeting ....Jan. 16—p 6
Kansas Formula Feed Conference ....Jan. 16—p 44; Jan. 30—p 50
Poultry Health as Influenced by Management Under Conditions of Intensified Production ....Jan. 16—p 20

MARKETING:
Farm Bureau to Set Up Marketing Unit ....Jan. 2—p 57
Impact of Increasing Feed Grain Production and Feeding Operations in the Southwest ....Jan. 30—p 44
National Broiler Council ....Jan. 30—p 1
National Unit Urged for Egg Marketing ....Jan. 2—p 52
New Hampshire Poultry Growers Assn. ....Jan. 2—p 10
Practice to Cut Egg Marketing Cost ....Jan. 9—p 69
Southeastern Poultry & Egg Assn. ....Jan. 30—p 1

MERCHANDISING:
Broiler Contractor Finds Farm Store More Profitable...Jan. 2—p 18
New Services Always Have Plus Sales Appeal ....Jan. 23—p 62
Pennsylvania Feed Dealer ....Jan. 30—p 30
Promotion Techniques Used to Introduce New Feed Line ....Jan. 16—p 60

MINERALS:
Extra Salt Reduces 'Water Belly' Losses ....Jan. 23—p 32
FDA Proposes List of Trace Minerals Recognized as Safe ....Jan. 9—p 6
Georgia Tests Zinc in Broiler Ration ....Jan. 16—p 93
Industry Protests FDA Proposal on Trace Minerals ....Jan. 30—p 1
New Feed Phosphate Plant to Open in West ....Jan. 30—p 6
Putting Research to Work, Jan. 2—p 49; Jan. 16—p 53; Jan. 23—p 30
Questions Raised on FDA Zinc Limit in Feed for Poults..Jan. 16—p 4
Results of Recent Beef Cattle Research ....Jan. 16—p 75

MOBILE MILLING:
Broiler Contractor Finds Farm Store More Profitable...Jan. 2—p 18

MOLASSES:
Molasses Exports and Imports Drop Sharply ....Jan. 30—p 36

PELLETING:
Automated Pelleting System ....Jan. 2—p 34
Kansas Formula Feed Conference ....Jan. 30—p 50
Mississippi Research on Cattle Feeding ....Jan. 9—p 74
Missouri Sheep Day ....Jan. 9—p 56
Pelleting and Its Effects on Micro-Ingredients ....Jan. 9—p 18
Plans for Production of Small Pelleting Unit ....Jan. 2—p 8
Recent Advances in Sheep Nutrition ....Jan. 2—p 38
Reports on Ohio Beef Cattle Research ....Jan. 16—p 68
Some Ideas on Feeding Pelleted Rations to Ruminants..Jan. 23—p 26
Wafer, Pellets Tested in Steer Rations ....Jan. 9—p 10

POTATO STARCH PULP:
To Use Potato Starch Pulp in Cattle Feed ....Jan. 9—p 49

POULTRY FEEDING:
Alfalfa Carotene as Vitamin A Source for Poultry ....Jan. 30—p 21
'Controlled Energy' Feeding Research ....Jan. 30—p 8
Kansas Formula Feed Conference ....Jan. 30—p 50

POULTRY INDUSTRY:
Best Time to Start Broiler Studied ....Jan. 2—p 31
Big Poultry Farms Growing; Small Ones Declining ....Jan. 23—p 7
Broiler Shortage Causes Georgia Plant Shutdowns ....Jan. 23—p 6
Delmarva Regional Poultry Meeting ....Jan. 16—p 6
National Broiler Council ....Jan. 16—p 100; Jan. 30—p 1
National Turkey Federation ....Jan. 9—pp 1 & 6
New Hampshire Poultry Growers Assn. ....Jan. 2—p 10
North Carolina Egg Producers to Vote on Promotion Program ....Jan. 2—p 56
Oklahoma Egg Men Form State Council ....Jan. 30—p 81
Poultry & Egg National Board ....Jan. 16—p 34
Reduction in Rail Rates on Eastbound Grain Sought....Jan. 23—p 19
Says 56% of Delmarva Income From Broilers ....Jan. 23—p 60
Southeastern Poultry & Egg Assn. ....Jan. 30—p 1
State Egg Output Rank Changes ....Jan. 30—p 80
Texas Egg Council ....Jan. 9—p 68

Turn to FEEDSTUFFS INDEX, page 72

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FEEDSTUFFS INDEX from page 71

USDA, Industry Discuss Poultry Reject Problem.....Jan. 2—p 1
USDA Offers to Purchase 1,195,700 lb. of Stilbestrol-Treated Poultry .....Jan. 23—p 7

POULTRY NUMBERS:
Chicken Pullorum Disease Testing Off .....Jan. 30—p 6
Fewer Chickens, Turkeys Tested for Pullorum Disease ..Jan. 2—p 54
Jan. 1 Laying Flock Smallest in 23 Years .....Jan. 16—p 1
Larger Heavy Breed Poult Hatch Seen .....Jan. 23—p 1
National Turkey Federation .....Jan. 9—p 1
Predict 6% Turkey Crop Gain .....Jan. 30—p 4
Pullorum Tests on Heavy Turkeys Up .....Jan. 30—p 14
Reduced Hatch of Chicks Indicated for January .....Jan. 23—p 1
20% Cut in Placements for Broiler Flocks Reported by USDA .....Jan. 23—p 77
Where the Nation's Layers Are Located .....Jan. 9—p 79

PRICES:
Broiler Prices Paid on Farm Average 18.38c in Delmarva .....Jan. 9—p 84
Broiler, Turkey Feeding Ratios Most Favorable .....Jan. 9—p 4
Broilers Steady, Eggs Mostly Down, Turkey Prices Generally Good .....Jan. 9—p 4
Dock Trouble Ends; Millfeeds Weaker .....Jan. 2—p 4
Hog Price Levels Above Year Earlier Predicted .....Jan. 23—p 10
Lamb Prices Studied at VPI .....Jan. 23—p 32
Optimistic 1960 Outlook for Dairy Farmers .....Jan. 2—p 1
President's Talk Seen as Having Deflating Effect on Commodities .....Jan. 9—p 1
Price Spread for Formula Poultry Feeds Studied .....Jan. 16—p 96
Producers Told to Buy Chicks Early .....Jan. 9—p 12
Significantly Higher Ingredient Prices .....Jan. 16—p 1
Southern Broiler Prices Advance .....Jan. 23—p 7
Soy Meal Down, Millfeeds Gain .....Jan. 23—p 4
Stronger Hog Prices in Outlook for Second Half of '60..Jan. 2—p 1
Trends in Cattle, Hog Prices .....Jan. 16—p 39
Up or Down .....Jan. 16—p 74; Jan. 30—p 16
USDA Sees Fed Cattle Prices Below 1959 .....Jan. 23—p 12

PRICE SUPPORTS:
USDA Buys Dried Egg Solids for Schools .....Jan. 23—p 6
USDA Keeps Current Dairy Support Prices .....Jan. 16—p 6
USDA to Resume Purchase of Dried Whole Egg Solids..Jan. 2—p 7

PRODUCTION & MILL OPERATIONS:
Automated Palleting System .....Jan. 2—p 34
Modernization Steps Improve Efficiency .....Jan. 23—p 75
New Custom Mill Grinds on Appointment Basis.....Jan. 9—p 30
New Feed Plant Specializes in Pelleted Rations.....Jan. 16—p 10
New Iowa Mill Operated by Two Men .....Jan. 30—p 38
New Services Always Have Plus Sales Appeal .....Jan. 23—p 62
Pennsylvania Feed Dealer .....Jan. 30—p 30
Pennsylvania Feed Firm Enters Contracting .....Jan. 23—p 46
Poultry Contracts Account for 60% of Firm's Output...Jan. 2—p 70

PROTEIN:
Colorado Project's Goal Is Finding 'Economy Chicken'..Jan. 2—p 32
Kansas Formula Feed Conference .....Jan. 30—p 50
Mississippi Research on Cattle .....Jan. 9—p 74

REGULATORY:
AFMA Publishes Digest of State Feed Laws .....Jan. 16—p 7
Disposal Order Given Georgia Poultrymen .....Jan. 23—p 6
FDA Asked to Clear Drug for Dog Food .....Jan. 16—p 8
FDA Proposes List of Trace Minerals Recognized as Safe .....Jan. 9—p 6
FDA States Policy on Extension of Compliance Time....Jan. 9—p 7
Feed Control Comment .....Jan. 9—p 36; Jan. 23—p 72
Georgia Now Checking Bulk Analysis, Weight .....Jan. 23—p 56
Human Health Aspects of Ag Chemicals 'Explored' ...Jan. 9—p 1
Industry Protests FDA Proposal on Trace Minerals ....Jan. 30—p 1
Kansas Formula Feed Conference .....Jan. 30—p 50
Northwest Retail Feed Assn. .....Jan. 23—p 1
Omaha Feed Club .....Jan. 23—p 6
Problems in Use of Agricultural Chemicals .....Jan. 9—p 14
Proposals for Delaney Clause Changes .....Jan. 30—p 1
Questions on FDA Zinc Limit in Feed for Poults .....Jan. 16—p 4
Secretary Outlines FDA Views on Delaney Clause.....Jan. 2—p 1
Terephthalic Acid Shipment Seized .....Jan. 2—p 6
U.S. Accelerating Drive on Chemical Misuse .....Jan. 2—p 1

RESEARCH:
Colorado Project's Goal Is Finding 'Economy Chicken'..Jan. 2—p 32
Germ-Free Lamb Used in Nutrition Tests at Notre Dame..Jan. 16—p 84
Urges Research on Forage Crop Composition .....Jan. 2—p 4

RESTRICTED FEEDING:
Recent 'Controlled Energy' Feeding Research .....Jan. 30—p 8

SERVICE:
New Services Always Have Plus Sales Appeal .....Jan. 23—p 62
Northwest Retail Feed Assn. .....Jan. 23—p 1

SHEEP FEEDING:
California Sheepmen Get Feeding Advice .....Jan. 2—p 11
Missouri Sheep Day .....Jan. 9—p 56
No Great Difference in Creep Rations for Lambs.....Jan. 2—p 79
Recent Advances in Sheep Nutrition .....Jan. 2—p 38
Wide Grain Choice for Creep Feeding Lambs .....Jan. 2—p 45

SILAGE:
Reports on Ohio Beef Cattle Research .....Jan. 16—p 68

SOYBEANS:
Capital Comment .....Jan. 2—p 6
Soybean Oil Measured by Electronic Device .....Jan. 2—p 56

SWINE FEEDING:
Automatic Hog Feeding System Weighs Feed .....Jan. 9—p 67
Cereal Grains Tested as Corn Replacement .....Jan. 30—p 88
Dehydrated Alfalfa in Confinement Feeding of Swine...Jan. 30—p 19

TRADEMARKS:
Trademarks Issued by U.S. Patent Office .....Jan. 23—p 48

TRANQUILIZERS:
Recent Advances in Sheep Nutrition .....Jan. 2—p 38
Reports on Ohio Beef Cattle Research .....Jan. 16—p 68
Results of Recent Beef Cattle Research .....Jan. 16—p 75

TRANSPORTATION:
Grain Transportation Patterns Shift .....Jan. 16—p 88

TURKEY FEEDING:
National Turkey Federation .....Jan. 9—p 1

VETERINARIAN RELATIONSHIPS:
Feed Man-Veterinarian Cooperation .....Jan. 9—p 60

VITAMINS:
Putting Research to Work .....Jan. 2—p 48
Alfalfa Carotene as Vitamin A Source for Poultry.....Jan. 30—p 21
Alfalfa as Source of Vitamin A Studied .....Jan. 23—p 14
Comparison of Vitamin K_1 and Menadione Sodium Bisulfite Complex as Standards in Chick Diets Suggested for Vitamin K Assay (charts) .....Jan. 23—p 34
Kansas Formula Feed Conference .....Jan. 30—p 50
Preparation for Vitamin K Assay for Feeds .....Jan. 16—p 48
Report Preparatory to Choosing of ANRC Vitamin E Standards .....Jan. 30—p 44
Standards and Diets for Vitamin K Research .....Jan. 16—p 48
Studies on Vitamin K Assay Diets .....Jan. 6—p 38

WAFERING:
Wafers, Pellets Tested in Steer Rations.....Jan. 9—p 10

Future Problems With Medicated Feeds Are Noted by FDA Official

DURHAM, N.H.—"It looks as if we are going to have some problems with medicated feeds," declared Nevis Cook, chief of the Boston office of the U.S. Food & Drug Administration, when he addressed the ninth annual Poultry Health Conference at the University of New Hampshire here, Feb. 4-5.

"I certainly do not wish to be an alarmist," Mr. Cook said, "but some of the manufacturers apparently are not exercising the careful, exact controls that are essential for anyone who is manufacturing and marketing potent drugs."

The speaker reported that his department had received several complaints from poultrymen that eggs have turned white when their normal color was brown. He gave a drug as the reason and said his men had found it in feed "though it was not declared on the label and its presence resulted from an error in manufacture."

Mr. Cook also revealed that his department had discovered that some poultry farmers are paying no attention to label directions which warn that certain medicated feeds must be discontinued some days before slaughtering. He warned that such negligence may result in residues of the drugs in the edible tissues of treated birds and that unless such residues are permitted under published regulations, the poultry in question will become an "illegal article of commerce."

The speaker concluded that three steps are necessary if the regulations are to be carefully followed:

1. Feed manufacturers will have to accept their responsibility in the preparation and mixing of feeds and must label the feeds so that the farmer will know precisely what he is getting and how to use it.

2. The farmer who uses the feed must read and heed the label directions and warnings provided by the manufacturer.

3. There must be an adequate level of enforcement of the rules by FDA and the state feed control officials.

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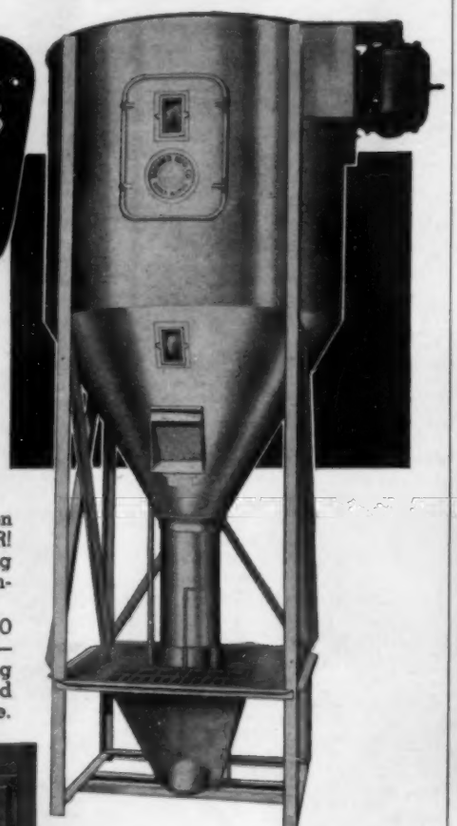
"We saved a fat $300.. increased profits 20% with our BROWER MIXER

Says Harry D. Heist, President, A & C Feed Co., Cheyenne, Wyoming

"We bought a Brower because it ran about $300 less than similar mixers. As far as we can see after a year's hard run, we were right. It does a good job and gives no trouble; we saved a fat $300. We've increased our feed profits about 20% and are serving about 10 to 15% more customers."



BROWER *Whirlwind* MIXER

Dependability, fast mixing action, and low cost operation make Brower the WORLD'S LARGEST SELLING MIXER! Brower action WHIRLS the ingredients instead of just stirring or tumbling them . . . produces the most thorough mix obtainable. Every sack has the same even mixture.

FAST and ECONOMICAL — a perfect blend in about 10 minutes at a power cost of only 3¢ to 5¢ a ton. Five sizes — 700, 1200, 2000, 3000 and 4000 pounds-per-batch mixing capacities. Above-floor and below-floor models. Heavy welded steel construction — built for years of trouble-free service.

Easy to get into through large hinged service door and hinged conveyor sleeve.

Note mixing paddle at top which WHIRLS the ingredients for the most thorough mix.

Glass observation window at eye level provides easy inspection of feed being mixed.

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expeller, pea-size
CORN KIB-LETS
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CORN FLAKES
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QUALITY DOG FOOD INGREDIENTS

HYGROMIX IS THE ONLY WORM CONTROL METHOD THAT KILLS THREE KINDS OF SWINE WORMS DAY AFTER DAY, AND ELIMINATES THE SOURCE OF THE PROBLEM BY STRANGLING WORM-EGG PRODUCTION.

How Hygromix kills swine worms... *and why this is important*

Flushing out swine worms once or twice in a pig's lifetime has never been the solution to the problem. The best-timed purging could never truly break the worms' life cycles. New eggs had been laid that would reinfect the herd again and again.

Now, with Hygromix-fortified feed, it is possible to kill swine worms day after day *before* they do their damage and *before* they reseed the lots, pens, and pastures with billions of new eggs.

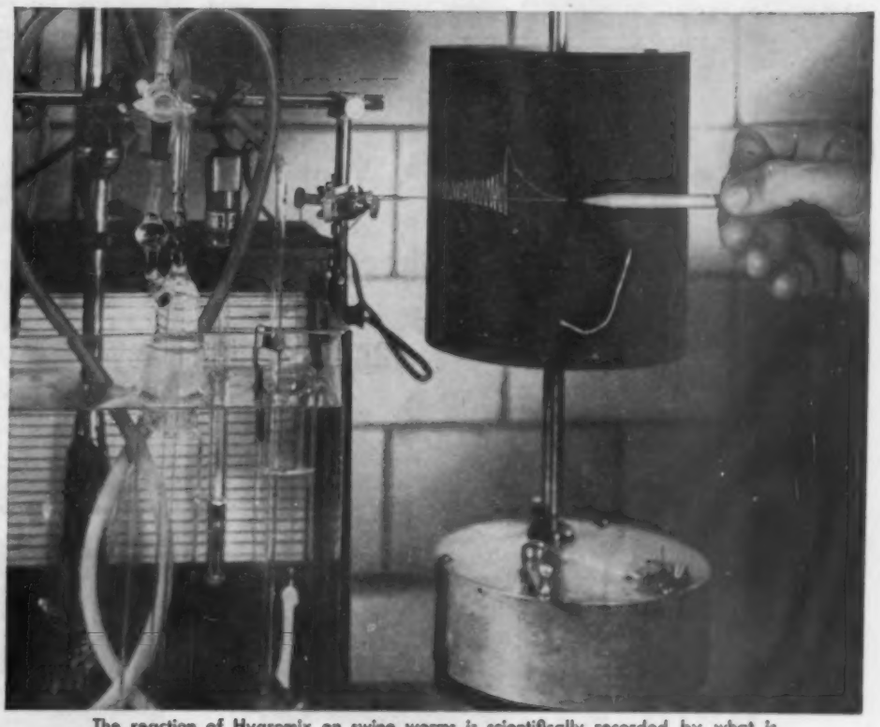
Hygromix kills three kinds of worms day after day

Hour after hour, day after day, Hygromix present in the hog's system kills the large roundworm, nodular worm, and whipworm. Although Hygromix kills more kinds of worms than any other method, the great advantage is that this killing action is continuous and, therefore, stops worm reproduction. As the young worms hatch and start to absorb nutrients from the pig's intestinal system, they also absorb Hygromix present in the system, wither, and die *before* they reach egg-laying maturity. In cases where hogs have not been fed Hygromix previously, the adult worms already present are also killed . . . thus breaking the worms' life cycle at two points.

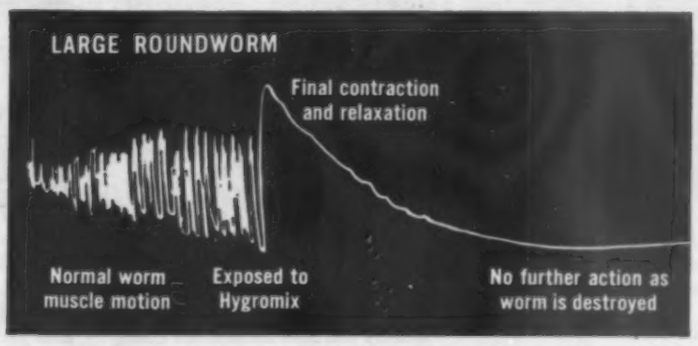
Why worms are seldom seen in the hog lot

Few worms will ever be found in the droppings of Hygromix-fed hogs for two reasons.

First, since the killing action of Hygromix is continuous, the worms are killed while they are too young to be visible. Secondly, when Hygromix is first fed to hogs that already have adult worms present in their system, it gently kills the worms instead of flushing them out. The worms are then usually destroyed in the hog's system before they are passed.



The reaction of Hygromix on swine worms is scientifically recorded by what is known as the "smoke drum" test shown above. A strip of worm muscle is suspended in a glass tube (lower right of tank) and connected to a needle that records the muscle's reaction to Hygromix on the revolving drum (upper right).


LARGE ROUNDWORM
Final contraction and relaxation
Normal worm muscle motion
Exposed to Hygromix
No further action as worm is destroyed

This actual tape from the revolving smoke drum above shows that Hygromix kills worms by inhibiting the mobility of the tissue. When exposed to hygromycin B, the worm's muscles make one last contraction as shown by the high point of the jagged line, then become immobile. For purposes of this test, highly concentrated dosages of Hygromix are used. Under actual feeding recommendations the killing action takes a longer period of time than indicated here.

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JOE BROOKS

BY AL P. NELSON

A Visitor Calls on Joe

A tall, lanky farmer in over-alls and grey mackinaw and grey cap, stomped into the Brooks salesroom and walked into Joe's office.

"Are you Joe Brooks?" he asked, taking off his cap and revealing thinning black hair.

"I am," replied the dealer with a friendly smile.

"I'm Pete Hutchins," the man stated slowly. "I have bought the Mueller Place out on Highway D. I'm lookin' for a feed connection, and so I dropped in to see you. I've heard about you from neighbors."

Joe smiled. "We'll be glad to take care of you, Mr. Hutchins. I had heard about the sale, and I was planning to get out to see you today or tomorrow."

"Now, don't get me wrong," stated the visitor practically. "I said I was lookin' for a feed connection. I didn't say I was committed to buy here. I'm shoppin'. I've been elsewhere. I want to get the story from all the mills and dealers around here. Then I'll make my choice."

"That's a very good way to do it," Joe said. "Now is there anything special you want to know about our policies?"

"You operate a grain bank, don't you?" asked Mr. Hutchins. "I plan to raise a lot of grain for my hogs, especially corn. I'll have some feeder cattle, too, I hope. And about 1,500 hens. They got a nice barn out there. And about 35 dairy cows. My wife and I know how to work. And I got two high school sons to help me part time."

Joe nodded. "I know the farm very well. I've sold George Mueller feed for many years. And lots of fertilizer. Got a soil map here of most of the farm which we made up for him. If you want to look at it sometime, let me know."

There was a flicker of interest in the farmer's eyes. "Yup, that'll help me. Now about the grain bank."

Expiains Grain Bank

"We operate one," Joe said, "and our customers like it. We buy your grain when you come in, credit your account and sell it to you at current market price when we use it on your order. That seems to suit everyone better than any other plan. We limit the amount we take per customer, due to storage facilities, but generally it's a 30 to 50 day supply."

"How about grain dryin'?" asked Mr. Hutchins.

"We've got a grain drier, and a competitive scale of rates if you want corn dried and don't want to use wet corn," Joe replied.

"What's the bulk discount?" said Mr. Hutchins.

"Five dollars per ton, with $1 and up per ton delivery, depending on distance," said Joe.

"You make your own line of feeds, too, don't you?" Mr. Hutchins asked.

Joe nodded. "Yes, we are very proud of the feeds we make. We call them Douglas County Feeds. We've got 22 registered feeds. If you want to bring in your grains for our grain bank, we can deliver our complete feeds back to you, if you use our formulas. All you have to do is call us and we can have it for you quickly, in bag or bulk."

"Suppose I want my own formula?" Mr. Hutchins wondered.

Joe smiled. "You can have that, too, if you want it, and we'll sell you grain back on the deal. We custom mix, and we custom pellet—all at competitive prices. We're here to give you the kind of feed and service you want. We think our formulas are the best in the area, of course, but if you want special formulas we'll work on them for you. How would you like to see the mill in operation?"

"I would," said the farmer. "I always like to see how feed is handled and who puts what in."

"I don't blame you," Joe said. "We like to have farmers take the time to tour our mill."

Joe put on his mackinaw and cap and took the farmer outside to the drive-in on the left side of the mill. There were overhead doors on both ends.

He showed the man three dump spots in this drive—one for grain bank storage, another for corn shelling, another for ingredients and grist.

"We put in a 100 h.p. hammermill a couple of years ago to give faster and better service," Joe explained, "and we have two mixers—capacity two tons each. We've got a molasses

Your feeds supply these extra performance factors when they contain Tenox BHT

an Eastman antioxidant for feeds

Here are four sound reasons for incorporating Tenox BHT-Agricultural Grade into your feeds.

Tenox BHT protects the all-important vitamin balance you build into your feeds.

Tenox BHT improves pigmentation in poultry by increasing the utilization of Vitamin A.

Tenox BHT increases weight gain by maintaining maximum nutritional content right up to the time the feed is used.

Tenox BHT protects poultry against certain deficiency diseases.

Tenox BHT-Agricultural Grade is free-flowing, non-dusting, non-caking. Its particle size is similar to that of other feed ingredients. It blends quickly and does not separate during handling or storage.

Tenox BHT-Agricultural Grade was developed to meet the specific needs of poultry feed manufacturers. It is the result of information provided by feed manufacturers combined with our own extensive knowledge of antioxidant performance.

Build extra performance into your feeds by specifying the antioxidant specially made by Eastman for feed use...Tenox BHT-Agricultural Grade. Tenox BHT-Agricultural Grade is available from leading distributors throughout the country. To find out how you can use this antioxidant in your feed formulations, write today to EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of the Eastman Kodak Company, KINGSPORT, TENNESSEE.

Tenox BHT-Agricultural Grade available in 2 forms

1. Tenox BHT (Conc.)-Agricultural Grade which may be added to your own diluent.
2. 25% Tenox BHT Premix, containing 25% BHT on a nutritive cereal carrier.

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FEED SUPPLEMENTS DEPARTMENT
350 Madison Avenue • New York 17, New York
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blender, a hay chopper and a fine bagging setup."

Then he took the man inside and showed him the machinery, including the pellet mill and cooling equipment and also the bulk loadout. The farmer watched carefully as Joe's mill man used the panel, sight weighed the hopper scale and then added the micro ingredients.

"We've got a number of bins for our fast moving, finished feeds," Joe explained, "and we can load out bulk rapidly. And, if you have your own custom mixes, we can load bulk out fast on them, too."

Joe took the man into the basement and showed him the molasses storage tank, the boiler, the fat tank, the water conditioning unit and other equipment. Then they went out back of the mill and saw the automatic grain drier in operation and the big cob house, from which farmers could buy litter.

Then the two men went back to the office. Joe poured some coffee for himself and the customer, then said, "Is there anything else about us you'd like to know, Mr. Hutchins?"

"Yeah," said Mr. Hutchins after he took a sip of coffee. "How do we have to pay for feed here?"

Joe looked carefully at the man, then smiled. "Well, we have a 2% cash discount. That means if paid by the 10th of the following month. If an account isn't paid by 60 days, then we charge 6% from then on."

The farmer frowned. "Kinda high interest, ain't it?"

"No. The prime rate is 5¼ at the bank," he said. "If customers don't pay us, we have to borrow at that rate. We are already giving 60 days credit at no interest. So you see, we hardly break even."

And What Else?

The man said nothing for a few moments, sipped more coffee, then asked, "What else do you do for customers?"

Joe was surprised at the question, but he said, "What else do we do for customers? Why, we will help you with just about any feeding project you undertake—if you ask us. We'll visit your farm, look over your problem and give you our considered advice. We'll do everything we can to help you make a profit, and try to make a reasonable profit ourselves on our feeds."

"I see," said Mr. Hutchins. He took a last sip of coffee, draining the cup. "Well, I gotta be goin'. I've got a few other feed dealers to see. If I decide to give you my business, I'll be back in a few days, 'cause I'll need feed quick."

"We'll be glad to serve you," Joe said. "Here, take along this ball point pen and yardstick. You may have use for it. And here's a serrated edge kitchen knife for your wife. We gave these to customers at Christmas, and I've got a couple left over."

"Thanks," said Mr. Hutchins, taking the items. The door closed quickly behind him.

Runty Rusty Hagen, the bookkeeper, grunted. "There's a skeptical customer, Joe. Think we'll land him?"

"I hope so," Joe smiled, "but even if we don't, I've learned a lesson."

"What's that?" asked Rusty.

"Well, this fellow is a competitive-minded customer. He speaks his mind. He asks questions other prospects don't ask. Now I know what such a customer wants to know. I'll use that information in writing my advertising and in handling other prospects. I like to have a hard-to-convince prospect once in a while. You can learn from a man who speaks his mind."

Fans and Sprinklers Increase Cattle Gains

BIRMINGHAM, ALA.—Use of fans and water sprinklers on cattle has resulted in increased gains in hot, humid weather, according to E. S. Holmes, assistant agricultural engineer, University of Florida.

Speaking before the southeast section of the American Society of Agricultural Engineers, Mr. Holmes explained that a fan operated at temperatures above 75° F. and sprinklers delivered a fine mist at humidities above 70%.

"During the first year the fanned and sprinkled animals gained at a daily rate of 0.35 lb. more than those not treated," he said. "This increase was 0.25 lb. the second year."

He pointed out that each lot contained 60 animals given the same type and amount of ration. Trials were run for 60 days.

Mr. Holmes cited tests on cattle on a drylot full ration placed under fan and compared to a similar group of cattle under natural ventilation. Tests were run for two summer months and the fan was automatically operated when air temperatures were above 75°.

"Tests during two successive years showed total net added gains from the fan lot to be $3.32 and $3.77, respectively, for each animal," the engineer said. He added that since there were eight cattle in each lot, the size of this experiment was not large enough to show significance when analyzed statistically.

Mr. Holmes emphasized that slightly more than one half of the U.S. cattle are found in areas where the average summer temperature is above 75°.

Northwestern Miller Announces Promotion

MINNEAPOLIS—Kenneth W. Wakershauser was named managing editor of The Northwestern Miller, Milton B. Kihlstrum, president of The Miller Publishing Co., announced this week.

For the past two years Mr. Wakershauser served as market editor for the international grain and milling business paper. George E. Swarbreck continues as editor of the milling industry's oldest business publication.

Prior to joining The Miller Publishing Co. in 1956, Mr. Wakershauser was city editor of the Hennepin County Review at Hopkins, Minn. Previously he was employed by the Fairmont (Minn.) Daily Sentinel.

Mr. Wakershauser is a graduate of the University of Minnesota school of journalism.

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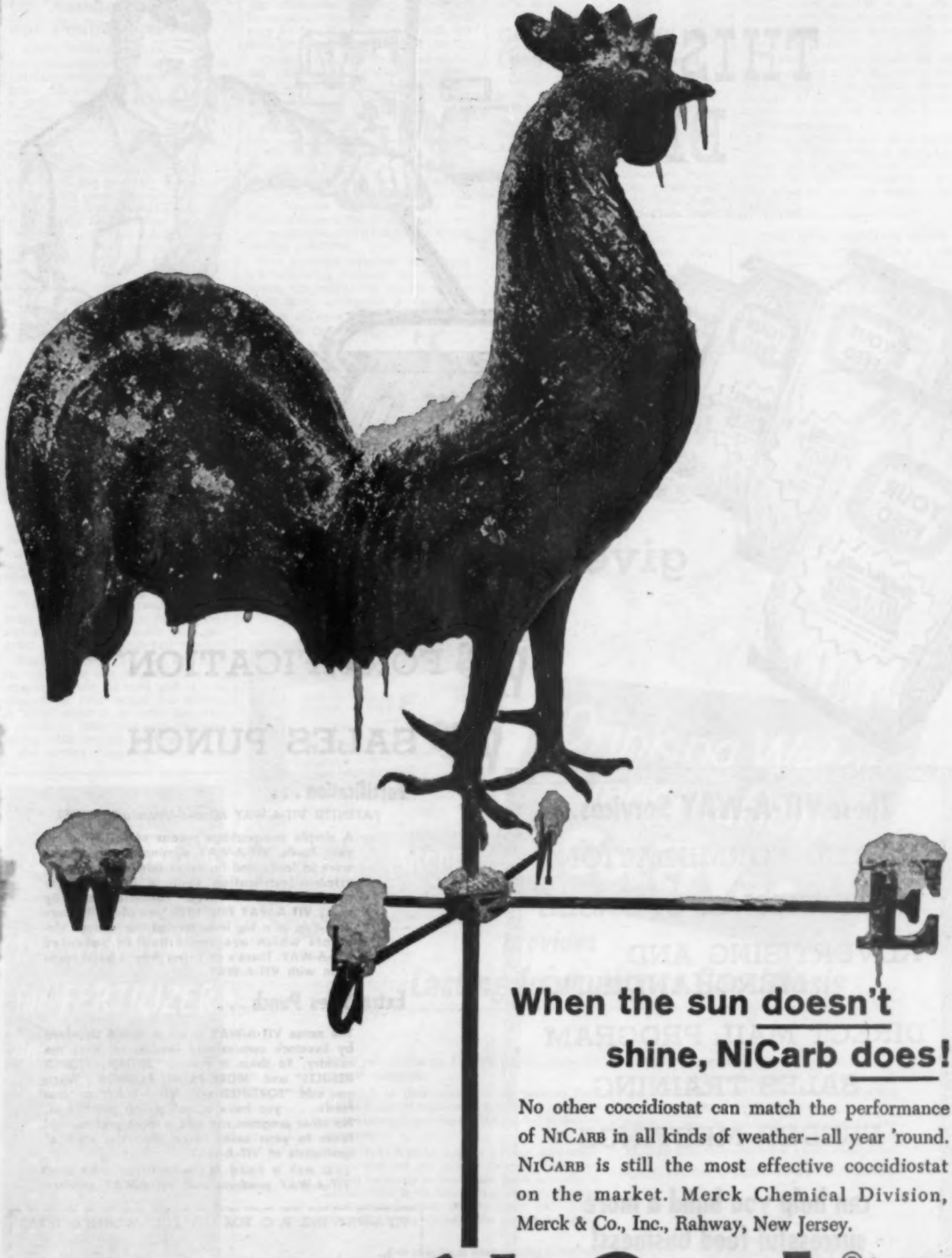

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Eastern States Tells Of 'Assistance Plan' For Poultrymen

WEST SPRINGFIELD, MASS.—An explanation of the Eastern States Farmers Exchange "assistance program" for pullet growers is given in a recent issue of the cooperative's monthly publication.

The cooperative points out that it has similar programs for broiler and turkey grower assistance.

The Eastern States Cooperator reports that the program is designed to meet the special financial needs of the growers. The purpose of the programs is to help growers over the "tough financial squeezes that occur from time to time and aid them to remain financially and managerially independent."

The magazine reports that the assistance programs are "delayed payment" programs. They give the purchaser "all the benefits of Eastern States cash purchases." Persons using assistance programs pay a service charge which defrays costs of the service.

Pullets can be raised from day old to 24 weeks of age, or can be placed on assistance at any time prior to reaching 24 weeks of age.

There are two options, program A-1 and program A-2. Under program A-1, all indebtedness must be paid not later than the date pullets reach 20 weeks of age. In program A-2, feed supplies are no longer provided under the plan after birds reach 24 weeks of age, but payment for indebtedness is made in six equal monthly installments beginning when birds are 28 weeks of age. In addition, persons marketing eggs through an Eastern States marketing branch, may, at their discretion, request that monthly payments under A-2 program be withheld from egg receipts.

Replacement pullets can be raised for sale under this program. The A-1 program would be used and is contingent on firm orders for pullets. A "firm" order is an order including a minimum down payment commensurate with day-old chick price.

The service charge is a fixed rate per bird applied to total number of surviving birds at date pullet growing assistance program agreement terminates. Such termination date may be less but will not exceed the date birds reach 24 weeks of age.

Chicks cannot be purchased under the assistance program. Only feed, litter and health aids are permissible items. Chick ownership is a prerequisite to use of this program.

Eastern States says it does not dictate managerial practices, but asks, at the time the agreement is signed, for information and an explanation of the owners' proposed managerial and supervisory program. In addition, Eastern States reserves the right to inspect the flocks and to offer suggestions with respect to sound rearing practices.

The payment schedule, when eggs are marketed through an Eastern States egg marketing branch and a withholding agreement is made, is over a six-month period. Payments are: 10%, first month; 15%, second month; 20%, third month; 20%, fourth month; 20%, fifth month, and 15%, sixth month.

Growth of Texas Cattle Feeding Is Described

CORPUS CHRISTI, TEXAS—Texas is rapidly becoming one of the nation's major cattle feeding states, with a tremendous growth during the last four years, according to John C. White, Texas commissioner of agriculture.

He said that until recent years practically all of the heavy beef consumed in Texas has come from feedlots in the midwestern Corn Belt. Texas cattle were sold as feeders to be shipped to the Corn Belt for fattening and processing, and then shipped back at high prices in the form of U.S. Good, U.S. Choice and U.S. Prime beef.

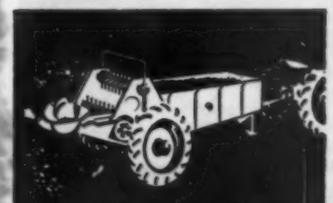
Mr. White called attention to several large feedlots, including the Luck T. Cattle Co. near San Antonio, which is expanding its facilities from 8,000 to 13,000. Lewter Feedlots, Lubbock, is now able to handle 25,000 cattle at one time, in addition to having a million-dollar slaughtering and processing plant.

Another plant scheduled for 1960 is a $2 million livestock feeding plant at Houston to supplement the new Armour & Co. feed processing plant there with from 400 to 1,000 head of cattle weekly.

There are also hundreds of smaller feeders in Texas with a capacity of from 100 to 1,000 head each, Mr. White said. Many of these have their own grinding and feed mixing equipment.

CREATIVE SERVICES STAFF

CHARLES CITY, IOWA—Robert V. Fischer, Greene, Iowa, has joined the creative services department of Dr. Salsbury's Laboratories, Charles City. For the past 3½ years he has been news editor of the Charles City Daily Press.



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VACCINATE with CocciVac 3-4 days after chicks are housed and you provide them with early and lasting immunity to coccidiosis. Early immunity is important for layers because it protects them during later growing periods and the laying cycle. Early immunity is also desirable for broilers in helping achieve weight gains and better feed conversion.

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CocciVac provides immunity against the commercially important species of coccidia at savings up to $7.50 per 1000 birds over use of a coccidiostat alone.

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FEED CONTROL COMMENT

By BRUCE POUNDSTONE
Secretary, Association of American Feed Control Officials
Kentucky Agricultural Experiment Station, Lexington

Feed Officials Handbook

ERRATA—Holders of the 1960 annual publication of the Association of American Feed Control Officials should make the following corrections:

Page 33, Definition 31, the chemical preservative "Nordihydroguaiaretic Acid" is misspelled in that the letter "a" appears instead of the letter "o" as the second letter.

Page 36, Definition T-5, the last five words should be enclosed in parentheses as follows "(Hard Woody Ring and Beeswings)."

Page 42, Definition T-12, the first word "Hydrolyzed" is misspelled in that the letter "j" appears instead of "y."

With the resignation of I. Levin as state chemist of Iowa, his name should no longer appear on page 79. His successor is M. R. Van Cleave, with the title of feed registrar.

W. S. Thompson of Ohio has been appointed corn products investigator to replace I. Levin. This change should be noted on page 8. Likewise, Mr. Thompson's name should appear as a member of the committee on terminology, page 7. Mr. Thompson also replaces Mr. Levin on the medicated feed labeling committee, page 6.

Additional changes and corrections in the section "Names and Addresses of Feed Control Officials" beginning on page 77:

Louisiana—The second initial should be "S" instead of "W" and read M. S. Perkins.

New Mexico—The address is now University Park instead of State College.

Tennessee—Clyde Cathey replaces L. C. Jacobs as director, division of feed, seed and fertilizer. The title of Eugene H. Holeman should read "Director" instead of "State Chemist."

Anyone noting other errors or additional changes will do the association and industry a favor by calling them to their attention.

◆

Terminology Committee

This is a new committee. One of the immediate tasks before it is consideration of ways in which "oil" is used in terms of feed ingredients. A study of these will indicate "oil" appears in definitions under wheat by-products, peanut products, soybean products, cottonseed products, flax products and corn products. That was the basis for the selection of the membership of the committee.

The committee will welcome suggestions and comments from the various segments of the industry as to their feelings on this and other questions. It is curious to many that what remains after extracting the oil from soybeans is called "soybean oil meal," whereas in the case of what remains after extracting the oil from cottonseed is known as "cottonseed meal." Why does oil appear in one and not the other? Neither product contains the oil as the oil has been extracted.

This leads to the observation that if oil appears in the name of a product does that mean it refers to the presence or the absence of oil? This is just one facet of the problem the committee will tackle.

The "Terminology Committee" has the opportunity of becoming a very important committee in the association. There is a need for screening and a review of all definitions and terms to the end that they will not only adequately represent products but follow a systematic pattern of nomenclature as well. Send your ideas to this committee for consideration.

P. M. Cormack Joins Sterwin Sales Staff

NEW YORK — Appointment of Paul M. Cormack as technical sales representative in the metropolitan New York City area for Sterwin Chemicals Inc. has been announced by William X. Clark, vice president in charge of sales.

P. M. Cormack

Mr. Cormack, who received B.S. and M.S. degrees from Syracuse University, will handle the firm's complete line of products. His sales territory will include Westchester County, Long Island and parts of New Jersey, as well as New York City.

Before joining Sterwin, Mr. Cormack was associated with H. J. Heinz Co. in Pittsburgh as a microbiologist, and at the firm's Medina, N.Y., plant as laboratory supervisor and bacteriologist.

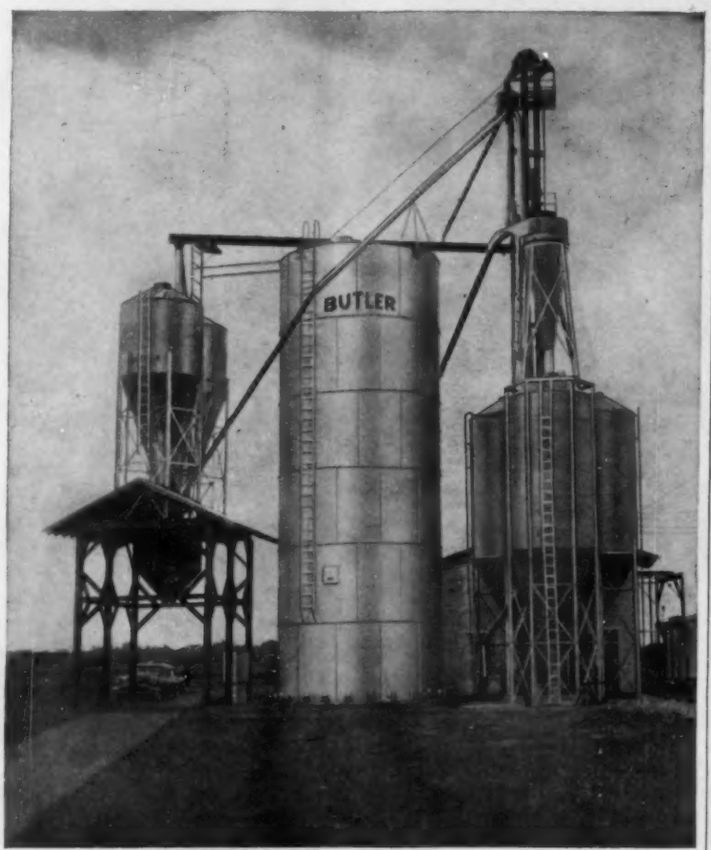
He was previously employed by the Lucidol division, Wallace & Tiernan, Inc.

New Installations

DES MOINES, IOWA—Installation of 19 temperature systems in 10 states has been announced by Hot Spot Detector, Inc., Des Moines.

Installations were as follows: Kansas, 5; Nebraska, 3; Texas, 3; Ohio, 1; Oklahoma, 2; Iowa, 1; New York, 1; Wisconsin, 1; Illinois, 1, and California, 1.

IT PAYS TO GO BULK WITH BUTLER



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The results: Direct savings of $640.00 in feed costs and $100.00 in labor costs each week.

But that's only the beginning. This company's bulk feed station (pictured above) is expected to handle twice—even four times—its present volume, and effect even further savings.

Now is the time to go bulk with Butler . . . switch from the old sack method of handling feeds and effect substantial savings in bag charges and labor costs. Handling feed the Butler Bulk-O-Matic way will also help you increase your over-all efficiency. Spillage, wastage and rodent damage will be eliminated. And, your customers will appreciate the faster, more efficient service you'll be able to give them.

Butler Bulk-O-Matic tanks can be supplied as individual units, each complete with its own discharge auger. Or, you can have a complete Bulk-O-Matic installation tailored to fit your specific needs, furnished complete with the necessary bucket elevators, augers, and belt conveyors—all push button controlled for ease and speed.

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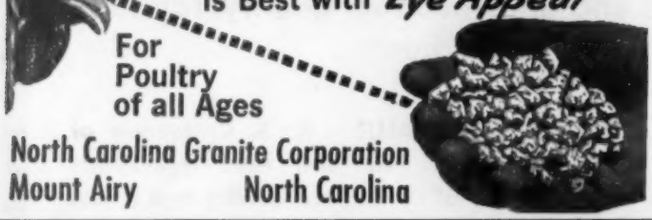

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SCHOOL

(Continued from page 16)

pellets are made, the fat is sprayed on the cooled pellets. It was generally agreed that if the cooled pellet was reheated, a better absorption of the fat would be attained.

Method of handling screened pellets to sack-off or bulk bins—Excessive handling of pellets can create a high percentage of fines. The belt conveyor is best for horizontal conveying to avoid fines. The bucket elevator is more generally used for vertical handling of pellets, but more and more air systems are being installed for this purpose. Some men said they were not getting excess breakage from air handling. Regulation of velocities can help.

BULK STORAGE AND DELIVERY—Bulk storage of materials in both meal and pellet form was discussed in group sessions moderated by Robert Adelman, Adelman Machinery Co., Seattle. Delivery of bulk pelleted feed also was considered. Wayne Hutchinson, Butler Mfg. Co., Spokane, was secretary.

Discussion of bin design for least separation of materials, Mr. Hutchinson indicated, brought these general opinions: Most felt that taller and narrower bins resulted in less separation by gravity. For less air separation, however, it was indicated that shorter bins are better.

As means of helping to overcome separation in bins, these things were mentioned: Baffles on the walls of bins; a direct fill tube so that material spirals down the sides of a bin; a vertical tube inside a square bin with openings in the tube—feed spills out of the openings as the tube is filled.

Anti-bridging methods or devices also were discussed. In hopper design, most preferred a 60° slope. It was noted that the larger the discharge opening, the better, and a rectangular opening was termed the best. A side draw-off can help on some feeds, it was pointed out. Also noted was use of a main hopper with a large opening and another hopper beneath it so that material can expand again. Tie rods may be beneficial in helping to prevent packing. Baffles in the bins were listed, too. One man mentioned use of a welded cross, placed about a foot above the discharge point. A stem attached to the cross extends up to the top of the bin. There a lever is used to raise the cross a few inches, disturbing the feed so that it will flow out.

For prevention of condensation in steel bins, it was suggested that there be three to five louvers at the top perimeter and a vent on the top. If the vent at the top equals the area of the side louvers, there should be adequate circulation, with cold air coming in and the warm air going out and carrying moisture. Fans are not needed.

Mechanical and pneumatic handling of pellets was discussed, largely as it pertains to bulk delivery units. Mr. Hutchinson said most feed men felt that one of the deciding factors in the type to use was the storage facility on the farm and the area around it—that is, whether there were problems in delivery of feed into the storage facilities. In some cases, use of air would be required. Some said that with pneumatic handling, pellet breakage was less and that less cleaning time was required with molasses feeds. Possible problems were said to be dusting, setting up on the farm to receive feed by air and disturbing livestock or poultry as a result of noise.

With mechanical screw and drag facilities, it was said, there can be greater capacity, and most deliveries can be made without special storage. The feed men said that problems were pellet breakage and molasses feed build-up.

For in-plant handling, some said that there were no special problems with air handling of pellets if the pellets were of good quality. Screw conveyors were said to cause the most damage to pellets, and use of belts, drag conveyors or air was suggested if reduction of fines is sought. It also was pointed out that higher speeds in bucket elevators and augers increase damage. Regarding use of augers, it was noted that higher angles of elevation cause more damage because of roll-back of pellets, and it was suggested that if a high angle were necessary, one might run out the feed in smaller amounts.

Storage time of pelleted feed was considered, and most suggested that any feed should be used as soon as possible. The consensus, said Mr. Adelman, was that to minimize loss of vitamins and palatability, three to four weeks of storage should be the maximum.

TESTIMONIAL—Lloyd S. Larson (left), is shown presenting Maurice Johnson with a plaque and case as a testimonial for "meritorious service as president" of the Midwest Feed Manufacturers Assn. during 1959. Mr. Larson is executive vice president of MFMA, and Mr. Johnson is retiring president of the MFMA and executive vice president of the Professional Feeds division of Spencer Kellogg & Sons, Inc., Kansas City. The presentation was made at the recent Midwest convention in Kansas City.

WINS MINK STOLE—T. H. Welsh (left), Naturich Mills, Abilene, Kansas, shows the winning card as Lloyd S. Larson, executive vice president of the Midwest Feed Manufacturers Assn., presents Mrs. Welsh with a mink stole she won during a drawing at the group's annual convention recently in Kansas City.

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YOUR PLUS FOR PROFIT

Dehydrated Alfalfa will boost the value of your feeds with high quality protein, all important vitamins and minerals . . . PLUS . . . Xanthopylls for better pigmentation and Unidentified factor(s) for growth promotion.

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CIBA Vet Research Section Is Renamed

SUMMIT, N.J.—Due to the expansion of the agricultural and veterinary research program at CIBA Pharmaceutical Products, Inc., the veterinary research section of the research department has been renamed the animal health division.

Dr. Alfred E. Earl, formerly head of veterinary research, will assume directorship of the new division. He also becomes a member of the research board, which plans and directs CIBA research activities.

The new division will seek to develop new products in the agricultural and veterinary fields. It also will conduct toxicity tests for other divisions of the research department, as well as for the preparation of new drug applications.

Dr. Earl joined CIBA as an associate pharmacologist in 1948. He was named senior research veterinarian three years later, and director of veterinary research in 1954. Before joining CIBA, he was in private veterinary practice.

CIBA presently sells 16 products to the ethical veterinary trade and is conducting research to broaden this line as well as develop drugs for use in animal production.

CIBA has introduced a new tranquilizing agent for poultry feeds called Serpasil. "While Serpasil is presently recommended only for chicken feeds, studies of its stress-ameliorating effects on turkeys and such other livestock as cattle, lambs and swine are also under way," officials noted.

Named Head of NFI Industrial Products

WASHINGTON—J. Steele Culbertson has been appointed director of the industrial products division of the National Fisheries Institute, Washington, according to W. C. Lunsford, Jr., chairman of the executive committee of the division.

J. S. Culbertson

Mr. Culbertson was formerly at Seattle as assistant manager of the Alaska Salmon Industry. Prior to that, he was fish and wildlife supervisor of the Alaskan fisheries.

He has a degree in electrical engineering from North Carolina State College. He succeeds Howard Sturgis, who recently joined Maine Marine Products, Oregon.

Cargill Names Man To Commodities Post

CHICAGO—Arthur G. Heideman, Cargill, Inc., technical director here for the sale and service of bulk molasses, has been named technical director of the firm's entire commodities operation.

Maitland D. Wyard, Cargill commodities manager who announced the appointment, said Mr. Heideman would headquarter here and would supervise the planning and installation of engineering systems for handling molasses, salt, feed sugar, twine and agricultural steel products. Cargill maintains commodities warehouses and plants here and in La-Salle, Ill., Memphis, Davenport and Savage, Minn.

Mr. Heideman joined Cargill in 1956. He was formerly with Industrial Molasses of Minneapolis, Pacific Molasses Co., Ltd., and United Distillers of America. He is a graduate of the University of Illinois.

Representatives Named

HOPKINS, MINN.—Appointment of W. G. Hewlings Co. and Krippner & Polley Sales Engineers as manufacturers' representatives for the Fluidizer Co., was announced by C. L. Martin, general manager, the Fluidizer Co., a division of Superior Separator Co., Hopkins.

Fluidizer manufactures a line of air conveying equipment for food processing, chemical manufacturing and other bulk handling industries.

Krippner & Polley, with headquarters in Denver, Colo., will represent Fluidizer in the Rocky Mountain states.

Hewlings, representative for processing and packaging equipment with headquarters in Montreal, Canada, will cover the eastern Canadian market.

CK Econolass
Don't Mix Without
(85% Feeding Cane Molasses Equivalent)

Here's THE economical, dry blackstrap molasses product dehydrated on soybean mill feed.

It means added palatability for your feeds and an easier mixing job for you. CK Econolass is never sticky — won't harden and ball-up.

CK comes packed (AND FAST, TOO) in moisture-resistant 50 lb. bags with uniform high quality order after order.

And orders and re-orders are what you get with the Econolass-Plus in your feeds.

Econolass is another champion from the CK line of feed ingredients which also include
Econosol — Fish solubles dried on soymeal.
New Econoloc — Soyoil and lecithin carried on soymeal.
New Econoferm—Multiple cultured product absorbed on soymeal.

CK Processing Company
Redfield, Iowa Muscatine, Iowa
The Best Friend Your Feed Ever Had

SEND FOR THE NEW ELTON CONVEYOR CATALOG
It will save money for you!
CHANTLAND MFG. CO.
Humboldt, Iowa

The Nutritionist Travels Thousands of Miles

. . . to make sure you have an efficient broiler feed

OMAFAC*

The nutritionist is constantly in touch with the latest research work in all parts of the country. At many meetings and conferences, he is constantly searching for new information to add to the results of his own research. Formulations are then thoroughly proved on his research farm. This results in rations which give your broilers fastest growth—at lowest cost.

Nutritionists have found that Squibb's Omafac helps to produce a more efficient ration. Only 0.5% of Omafac will replace 4% to 5% of crude Unknown Growth Factor supplements—and at less cost per ton. Omafac also increases the antibiotic content of the ration by 15 gm. per ton (streptomycin sulfate) at the 0.5% level. An additional plus factor is Omafac's uniformly high Vitamin B_{12} content.

Omafac is produced by Squibb from dried penicillin and streptomycin residues. The analysis shown on the label is guaranteed. Omafac is always in dependable year-round supply. Write for more facts.

Another Squibb Feed Ingredient

Squibb Procaine Penicillin G is a special grade of penicillin with *Controlled Particle Size*.[1] Developed especially for use in *all* feeds, it has an exceptionally high degree of stability in mash or pelleted form. Flows freely and mixes readily, will not lump or cake.

Available as 100% procaine penicillin unmasked by carrier. Also as 80% and 50% in oyster shell meal.

FREE: Send for Technical Bulletin containing stability data, recommended usage, etc. Write today to: Chemicals Sales Department, E. R. SQUIBB & SONS, *Division of Olin Mathieson Chemical Corporation*, 745 Fifth Avenue, New York 22, New York.

1. Patent applied for
*OMAFAC is a Squibb trademark

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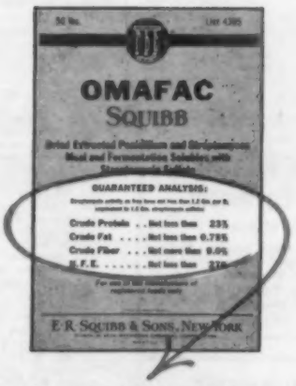
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GUARANTEED ANALYSIS:
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Crude Fat . . . . Not less than 0.75%
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THIS IS THE OMAFAC* LABEL. Note the guaranteed analysis which lists the percentage of each ingredient to help the nutritionist formulate more efficient broiler rations for you.

☆ Classified Ads ☆

Classified advertisements received by Tuesday each week will be inserted for the issue of the following Saturday. Rates: 20¢ per word; minimum charge $3.00. Situations wanted, 15¢ a word; $2.25 minimum. In figuring cost of your classified ad . . . each word, abbreviation, telephone exchange and number, set of initials, or group of figures counts as a word. To the number of words in your want ad itself add six (6) words for your name and address or name and address of your firm. This applies for both direct-reply ads and for blind ads containing a box number. If an ad is keyed, care of Feedstuffs, 25¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $13.00 per column inch. No discount on ads ordered for more than one insertion.

All Want Ads cash with order.

MACHINERY FOR SALE

12½-TON TOLEDO DIAL SUSPENSION hopper scale, like new, 32 inch dial, Model 2500. O. W. Meyer, Napoleon, Ohio.

WHIRLAWAY AIRBLAST CAR LOADERS, cast iron pulleys, new and used feed and elevator equipment. Hagan Mill Machinery, P.O. Box 574, Jefferson City, Mo.

CHAMPION MOBILE GRINDER AND mixer units. Champion Portable Mill Co., 2105 Como Ave. S.E., Minneapolis 14, Minn.

FEED MIXER, 1-TON CAPACITY, GUAR-anteed first-class throughout, 5 H.P. motor drive. Address Ad No. 3479, Feedstuffs, Minneapolis 40, Minn.

JAY BEE MOBILE FEEDMAKER ON late model Ford truck. Good condition. Priced to sell. Ray Equipment, Rock Creek, Ohio.

MELO'S PORTABLE MILL, MIXER AND sheller. 13,000 miles on truck I.H.C., 627 hours on diesel. Motor 2½ years old. Good condition. Claud Piland, Box 186, Crossville, Ill.

ONE TON CASCADE VERTICAL FEED mixer with motor and roller bearings. May be seen daily. Evenings and weekends by appointment. A. F. Bright, Wrightstown, N. J.

DAFFIN FEEDMOBILE — COMPLETELY overhauled and repainted, many new replacement parts. Like new and looks it. Ready for years of money making service at a 35% saving. Address Ad No. 5687, Feedstuffs, Minneapolis 40, Minn.

FOR SALE—NEW AND RECONDITIONED Richardson, and O K bagging scales; Union Special, Fischbein, Minneapolis, and Wilcox & Gibbs sewing heads. Whizzer bagging conveyors, bins. Winborns, Mill Equipment Service, Williamsburg, Iowa.

WILL SELL TO HIGHEST BIDDER—ONE 1959 B & L mobile feed mill, in top condition, 6 months old, 10,000 miles, can be seen in Roanoke, Va. Eastern Agri-Business Corp., 732 First Street S.E., Roanoke, Va.; Phone DI 4-5889.

SALE — SPROUT-WALDRON 335 CU. FT. horizontal ribbon mixer. Type 304 stainless steel dry material handling installation, including: 1,800 cu. ft. weigh hoppers, bucket elevators, shake and screw conveyors, etc. Perry, 1403 N. 6th St., Philadelphia 22, Pa.

JAY BEE NO. 3 UX MILL WITH 60 H.P. 3,600 R.P.M. motor with base, coupling, magnet, good condition, also model 216 Bauer mill for use with 50 or 75 h.p. motor 1,800 R.P.M., available immediately. Write or phone Harold Attebery, Granville, Ohio.

TWO MS600 CUMMINS TURBODIESEL engines, 160 H.P. New, not surplus, with either clutch direct P.T.O. or 3 to 1 reduction gear, water cooled, manifolds for dusty conditions. Reduced price to $3,500. Flowers Equipment Co., Box 247, San Marcos, Texas.

FOR SALE—ENCLOSED MOTORS; Richardson scale; truck scales; hammermills; oat crimpers; horizontal and upright feed mixers; sewing machines; elevator legs; screw conveyors; molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

FOR SALE

Feed and Grain Handling and Processing Equipment

NEW & USED

Scales, Hammermills, Feed Mixers, Sewing Machines, Elevators, Pellet Mills, and Grain Cleaners

E. H. BEER & CO., INC.
Ibsen Ave. & Newkirk St.
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NEW EQUIPMENT GREATLY REDUCED

Pakmaster PM30 bulk truck 7¼ ton cap. on new 2-ton Ford chassis, Howes 3-ton Vertical Mixer, Jr. Seed Cleaner, No. 3 Snappy Shaker. All sizes new crimpers in stock. "NEAR NEW EQUIPMENT" two Hammer Mill Motors 100 H.P., G.E. 3,600 r.p.m. open, 75 H.P. Howell 3,600 r.p.m. TEFC; two rebuilt guar. 30 H.P. California Master Pellet Mills, one 40 H.P. Heavy Duty, three Richmond Gyro Whip Sifters, two Allis-Chalmers Le Head, Hughes 60 H.P. Hammer Mill and Motor AA-1; several used oat crimpers and corn rolls, scales, sewing machines, fans, feeders, new and used rolls. Many other items. Ship any item on approval..

ROSS, INC.
12 N.E. 20th St., Oklahoma City, Okla.

MACHINERY FOR SALE

TWO IOWA PORTABLE MILL AND MIX-er units, both equipped with molasses mixer and powered by G.M.C. diesels. Three Champion mill and mixer units, priced to sell. Myers-Sherman 16" stationary mill, also Moocers 24" industrial hammermill, stationary with power unit. Moocers Mfg. Co., Windom, Minn., phone TEmple 1-3223, or Mid-States Mill & Machinery, Omaha, Neb., WAlnut 5183.

100 H.P. ACE SPROUT-WALDRON PEL-let mill, complete with motor, coolers, pneu-vac air system; 60 H.P. Sprout-Waldron pellet mill and cooler; 50 H.P. heavy duty California pellet mill; 5-ton S. Howes Eureka horizontal mixer, with silent chain drive and 40 H.P. motor. Call or write J. E. Hagan Mill Machinery, P. O. Box 574, Jefferson City, Mo.; Phone 6-2197.

TWO MOBILE MILLS, ONE HAS 471 G.M.C., 120 H.P. diesel and 20 inch Industrial mill on International cab-over. Other has 90 H.P. gasoline unit and 17 inch industrial mill. Also separately clutched roller mill on Ford cab-over. Both have 2-ton mixers and are in excellent condition. Diesel $8,950, gas unit $6,450, with written guarantee. Call Advance Farm Service, Clinton 6-4266, at Madison, S. D.

MACHINERY WANTED

WANTED—50 H.P. MOTOR WITH START-er and base. Fred King, Princeton, Mo.

WANTED — USED PELLET COOLER, preferably horizontal belt type. Abingdon Milling Co., Abingdon, Ill.

WANTED—3-TON VERTICAL MIXER IN good condition. (Preferably Bluestreak.) Belstra Feed Mix Sales, DeMotte, Ind.

ALL KINDS OF GOOD USED GRAIN processing machinery. E. H. Beer & Co., Inc., Baltimore 24, Md.

WANTED—ONE (3-TON) NO. 548 HOWES Eureka mixer, without motor. O. W. Meyer, Napoleon, Ohio.

WANTED—GOOD USED SUNCURED AL-falfa meal packer for ¼" grind in burlap. State location and price. Consolidated Mills, Inc., Box 5, Blissfield, Mich.

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

WANTED: GRAIN STORAGE ELEVATORS, midwest location 50,000 bushels and up; lease or purchase; please state full details as to price, location, loading and unloading facilities, etc. Address ad No. 5604, Feedstuffs, Minneapolis 40, Minn.

BUSINESS OPPORTUNITIES

FOR SALE — FEED, SEED AND FER-tilizer business with mill fully equipped in prosperous central Minnesota community. Terms. Address Ad No. 5651, Feedstuffs, Minneapolis 40, Minn.

FOR SALE OR LEASE—10,000 BU. ELE-vator and land—on railroad siding at Sioux Falls, S. D. Includes new modern office—basement overhead bins—40x100 warehouse—½ block from main road to Morrell packing plant. Adjoining warehouse 30x200 can be leased or bought. Contact W. E. Unke, Bridgewater, S. D.

FOR SALE — ALFALFA MILL LOCATED in finest alfalfa area. McGeehee drum modified to get 3 tons per hour. California pellet mill (Century) used two seasons, gas generator for gas storage. Complete plant with field equipment, located on railroad siding. Contact Dan McDonald, Clare, Mich.

FOR SALE — COMBINED FEED-ANIMAL health. Own and national lines. Reason—age. Trackage. Nice warehouse. Well located, Midwest. Approx. $300,000 volume. Inventory A/C receivable equipment, approx. $50,000. Real estate $30,000 additional or will lease. Address Ad No. 5723, Feedstuffs, Minneapolis 40, Minn.

FOR SALE—FEED MILL IN TEXAS, OWN line of registered feeds. Good volume of custom work. Large part of feed delivered in bulk. Plant located in choice area. Diversified farming, lots of beef cattle, dairy cattle, hogs and poultry. 30 to 40 ton daily capacity. Financing can be arranged for responsible party. Address Ad No. 5688, Feedstuffs Minneapolis 40, Minn.

HELP WANTED

AGRICULTURAL ADVERTISING COPY writer wanted by large midwestern firm dealing in all types of agricultural merchandise. Knowledge of display design helpful. Good, permanent position with talented, well-adjusted people. Address Ad No. 5657, Feedstuffs, Minneapolis 40, Minn.

HELP WANTED

MAJOR MANUFACTURER OF BULK FEED delivery units needs aggressive, personable salesman to sell in central Midwest territory. Locate around mid-Illinois. Salary plus commission. Car and travel expenses furnished. Paid vacation, insurance program, and other fringe benefits. Feed industry, truck or comparable sales experience desirable. Address Ad No. 5684, Feedstuffs, Minneapolis 40, Minn.

WANTED — BROKERS, MANUFACTUR-ers' agents—sales agents at present selling and calling on farm supply outlets—implement dealers—feed mills. Our line of well introduced and known Belgian, Mexican and Portuguese baler twine—baling wire—barbed wire—field fence will give you during the next six months that extra few hundred dollars weekly in commissions needed to make a success of your operation. Write immediately. Address Ad No. 5698, Feedstuffs, Minneapolis 40, Minn.

SITUATIONS WANTED

MANAGER—FEED, FLOUR MILL, GRAIN elevator. Experienced all department supervision. Address Ad No. 5721, Feedstuffs, Minneapolis 40, Minn.

SALES MANAGER DESIRES NEW POSI-tion. Successful background and eight years' experience. Age 37, married and a graduate of Iowa State University in agriculture and nutrition. Address Ad No. 5717, Feedstuffs, Minneapolis 40, Minn.

MAN WITH WIDE EXPERIENCE IN feeds and ingredients desires employment, preferably Southwest. Knowledge and experience in nutrition, sales and sales management, dealer appointments and direction. Public relations, credit and collection, registrations, labeling. Agriculture background. Willing to travel extensively. Address Ad No. 5699, Feedstuffs, Minneapolis 40, Minn.

Turkey Market Plan

WINNIPEG—Ontario turkey producers failed to carry a sufficient majority on a recent plebiscite which would have permitted the Ontario Turkey Assn. to set up a modified marketing plan allowing the association to levy a fee on producers for the purpose of advertising and otherwise promoting the sale of Ontario grown turkeys.

Out of the 920 producers eligible to vote, only 447 cast ballots—48.5% of those eligible.

Vote in favor of the plan was 53.2%, falling short of the 66⅔% required to make the plan operative. Some 238 producers were in favor of the levy with 209 voting against the proposal.

G. F. Ford L. R. Lyons

Winger Begins Bulk Equipment Production

OTTUMWA, IOWA—Winger Manufacturing Co. has begun operations on the Bulkmaster line of self-unloading bulk material truck bodies and trailers. The firm recently purchased the line from Dorsey Trailers, Elba, Ala.

"Self-unloading bodies and trailers are being produced to serve all segments of the industry, including the poultry and livestock industry, as well as producers of dry bulk materials, lime, fertilizers and others," said Walter Winger, general manager.

George F. Ford, former Dorsey sales manager of Bulkmaster division, and L. R. Lyons, former Dorsey chief engineer of Bulkmaster division, will continue in these capacities with the Winger organization. Mr. Ford will be assisted in sales by Kenneth Rohm. The present distributors also will continue to play an important part in the proper handling of services and sales.

For the past 20 years, Winger has been well-known as a custom fabricator of material handling equipment in carbon steel, stainless steel and aluminum, producing a large number of items for meat packers, materials handling and chemical industries.

The firm is owned and operated by the Winger family, including Barney Winger and his four sons, Lloyd, Henry, Walter and Clifford.

Joins Nutrena

PEORIA, ILL.—Robert J. Blaes, former Perryville, Mo., livestock farmer, has been named to the sales staff of Nutrena Feeds here, according to Earl J. Raff, central region sales manager.

Mr. Blaes will service Nutrena Mills, Inc., livestock and poultry production systems to farmers in the Peoria area.

He graduated from the University of Missouri with a major in animal husbandry and was a Doane Agricultural Service farm manager for six years.

Stocker and Feeder Cattle and Sheep Received in Selected North Central States, January, 1960, with Comparisons*

Cattle and Calves

State	Public stockyards —January— 1959	1960	Direct —January— 1959	1960	Total —January— 1959	1960	Total —Jan.-Dec.— 1958	1959
Ohio	4,090	5,828	1,074	1,924	5,164	7,752	97,357	122,922
Indiana	6,291	5,438	2,712	20,292	9,003	25,730	243,026	300,997
Illinois	19,729	24,295	37,866	38,210	57,595	62,505	1,208,940	1,283,770
Michigan	1,507	1,990	609	2,022	2,116	4,012	61,103	79,381
Wisconsin	1,797	1,964	1,259	1,479	3,056	3,443	37,909	45,191
Minnesota	17,825	15,898	33,521	44,835	51,346	60,733	684,817	731,365
Iowa	94,914	78,956	67,427	69,736	162,341	148,692	2,175,744	2,592,360
So. Dakota	9,871	8,616	7,977	4,805	17,848	13,421	231,020	203,715
Nebraska	39,437	20,811	38,422	34,424	77,859	55,235	951,773	1,112,226
Total 9 states	195,461	163,796	190,867	217,727	386,328	381,523	5,691,689	6,479,927

Sheep and Lambs

Ohio	1,070	1,014	.....	200	1,070	1,214	60,826	47,448
Indiana	2,336	2,148	627	300	2,963	2,448	85,738	82,649
Illinois	3,526	7,169	11,383	13,216	14,909	20,385	380,826	370,412
Michigan	1,666	395	21	.....	1,687	395	24,172	19,501
Wisconsin	.....	.....	500	.....	500	.....	18,617	19,949
Minnesota	22,540	24,210	14,278	17,268	36,818	41,478	354,999	418,730
Iowa	16,193	18,478	61,149	44,327	77,342	62,805	1,207,080	1,271,712
So. Dakota	6,711	6,250	3,681	10,068	10,392	16,318	168,155	199,782
Nebraska	11,794	12,048	5,850	3,135	17,644	15,183	435,867	455,335
Total 9 states	65,836	71,712	97,489	88,514	163,325	160,226	2,936,280	3,085,518

*Data in this report are obtained from offices of state veterinarians. Under "public stockyards" are included stockers and feeders which were bought at stockyards. Under "direct" are included stockers and feeders from points other than public stockyards, some of which are inspected at public stockyards while stopping for feed, water and rest enroute.

MIDWEST PANELS—Shown are members of panels discussing tomorrow's formulas (left), and poultry (right), at the Midwest Feed Manufacturers Assn. convention at Kansas City (Feb. 13 Feedstuffs). Members of the feed formula panels were, left to right, Dr. Damon Catron, Iowa State University; E. C. Fuller, Nutrena Mills, Inc., Minneapolis; Dr. J. L. Krider, Central Soya, Ft. Wayne, Ind.; Dr. Ralph Kneeland, Jr., Food and Drug Administration, Washington; Dr. J. Russell Couch, Texas A&M College; Eugene H. Spitzer, Murphy Products Co., Burlington, Wis.; Dr. W. M. Beeson, Purdue University. In the second picture, showing the poultry panel, are Dr. E. M. Funk, University of Missouri; Don Turnbull, executive vice president, American Poultry & Hatchery Federation, Kansas City; John Randolph, Corn Belt Hatcheries, Hope, Ark; Phil Evans, KMBC farm director, Kansas City, and Bill Parmalee, Mel Miller & Co., Inc., Kansas City.

AD COUNCIL SESSION—These are the members of the Midwest Feed Manufacturers Assn. advertising council who planned a special workshop luncheon session at the association's meeting recently in Kansas City (left to right): Jack Dow, Dow Advertising Agency, Omaha; Vernard E. Lundin, Hubbard Milling Co., Mankato, Minn.; Ray Gould, Dannen Mills, Inc., St. Joseph; Harvey Bergren, Pay Way Feed Mills, Inc., Kansas City. Mr. Lundin presided over the workshop and the others spoke.

AFMA to Work With Groups to Minimize Treated Seed Danger

CHICAGO — The American Feed Manufacturers Assn. has taken steps to work with other groups concerned toward minimizing or eliminating the danger involved in treated seed.

A meeting with the American Seed Trade Assn. was held recently. It was called by the Seed Treatment and Protection Committee of ASTA and was attended by representatives of AFMA, National Grain Trade Council, Grain and Feed Dealers National Assn. and the National Agricultural Chemicals Assn.

The feed and chemical interests discussed the problem dangers from the position of each group. The ASTA Seed Treatment and Protection Committee has named a special "study committee" to be made up of three members of the American Seed Trade Assn. and the chairman of additional "study committees" to be named by each of the organizations mentioned. Another meeting is planned this spring.

AFMA notes that it has been common practice for seed houses to chemically treat supplies of seed stock to improve viability and to control certain possible diseases. In general, the organic seed protectants are toxic when fed to poultry and for this reason, it is illegal to move surplus stocks of treated-seed in normal grain channels.

However, AFMA notes, in recent times, the movement of treated seed into channels where it might be used for poultry has brought concern to formula feed manufacturers. "It can only be assumed," says AFMA, "that excess supplies of treated seed have found their way into the grain market accidentally, through carelessness, or through ignorance on the part of the original seller.

"Some elevators, feed mills, dealers and feeders are said to be running chemical checks on grain purchases to detect any chemically-treated seed that might be present," says AFMA. "Should tests detect such adulteration, the seller who improperly introduces such treated seed into channels where it could be used for food, feed or oil purposes will be liable for damages and for action by the feed control service and by Pure Food and Drug Administration."

Ray Ewing Adds to Eastern Sales Staff

PASADENA, CAL.—H. G. Zeibel, Fleetville, Pa., has been appointed to the eastern sales staff of The Ray Ewing Co., according to Jack Plonsky, executive vice president.

H. G. Zeibel

Mr. Zeibel is a graduate of Penn State with a degree in agronomy. He is well known in the feed industry, having represented the Hubbard Milling Co., Mankato, Minn., as their eastern technical representative in the Pennsylvania area. Mr. Zeibel also managed a turkey hatchery in Virginia before joining American Cyanamid in 1952. During the past seven years, Mr. Zeibel has produced over a dozen technical publications on Poultry Nutritional Research.

Mr. Zeibel will be working with Earl Reeves, eastern sales manager, out of the newly-expanded Lancaster, Pa., plant. He will soon move to the North Carolina area to bring Ray Ewing nutritional service and products to feed manufacturers in the southeastern states.

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- 20-in. mill with wide top
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- 16-in. Gruendler high speed mill with cob crusher.
- 16-in. Jay Bee Mill, high speed, late model.
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MISCELLANEOUS EQUIPMENT

- Sprout-Waldron molasses mixer, type 2.5, 15 h.p. on blender, 1 h.p. on auger, 3 h.p. gear head on pump
- 30-in. Sprout-Waldron corn cutter and grader.
- 17-in. belt drag feeder x 16-in. wide with 1 h.p. motor and Reeves variable speed drive.
- 100 h.p. G.E. Type 1 compensator, 220 volt (used).
- 40 h.p. 1,800 r.p.m. 220/440 volt, B. B. motor (new, shop worn).
- 40 h.p. 1,800 r.p.m. 220 volt, B.B. G.E. motor.
- 40 h.p. 220 volt magnetic starter.
- 75 h.p. 1,800 r.p.m. 220/440 volt, sleeve bearing, G.E. motor.
- 20 h.p. 1,800 r.p.m. 220 volt, sleeve bearing, double end shaft, G.E.
- 75 h.p. 220 volt compensator, brand new.
- 40 h.p. 3,600 r.p.m. 220/440 volt B.B. motor.
- 60 h.p. 220 volt compensator.

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DEHY RESEARCH COUNCIL—These scientists are members of the American Dehydrators Assn. Research Council. They are pictured at the ADA convention recently in Colorado Springs, Colo. Left to right are:

Seated, Dr. Merle Brinegar, Allied Mills, Inc., Libertyville, Ill.; Dr. U. S. Garrigus, University of Illinois, Urbana; Dr. S. J. Slinger, Ontario Agricultural College, Guelph; Dr. William R. Kehr, U.S. Department of Agriculture, Lincoln, Neb.; Dr. Walter A. Gilsto, Wirthmore Feeds, Inc., Waltham, Mass.; and Roy C. Elrod, Archer-Daniels-Midland Co., Minneapolis. Standing, Dr. H. R. Bird, University of Wisconsin, Madison; Dr. L. E. Hanson, University of Minnesota, St. Paul; Dr. Francis H. Bird, Eastern States Farmers Exchange, Inc., West Springfield, Mass.; H. C. Schaefer, Ralston Purina Co., St. Louis; Dr. W. W. Cravens, McMillen Feed Mills, Decatur, Ind.; Dr. L. E. Card, University of Illinois, Urbana (guest of the council); Dr. G. O. Kohler, U.S. Department of Agriculture, Albany, Cal., Dr. H. Ernest Bechtel, Ackworth, Iowa, and Dr. W. M. Beeson, Purdue University, Lafayette, Ind.

Turkey Group Plans Foreign Market Push

KANSAS CITY—Greater emphasis on developing foreign markets was a major item of business at the National Turkey Federation executive committee meeting in Kansas City, Feb. 10-11. NTF leaders are convinced this is one of the greatest opportunities to develop new market outlets for turkeys.

While promotion of turkeys in the U.S. will continue to be given primary attention, more promotional effort than in the past will be devoted to further stimulating the growing volume of turkeys moving abroad.

For several years NTF has joined with other poultry industry organizations in promoting all poultry products through the International Trade Development Committee.

The total EMT campaign budget adopted for 1960 amounts to $200,000, with Evans & Associates entrusted with expenditure of approximately $110,000 for advertising and public relations this year. Continued confidence in the Poultry and Egg National Board is evidenced by a guarantee of $30,000 and the promise of an additional $10,000 if possible.

Dr. Cliff D. Carpenter, chairman of the NTF research advisory committee, presented recommendations for grants of research funds totaling $16,500. These recommendations were approved. During the course of the meeting an unanticipated source of approximately $4,400 in new research funds was announced. Final confirmation of these new funds should increase total research grants to more than $20,000 for this year.

The federation budget approved at this meeting totals almost a half million dollars.

NTF went on record as opposing S2516, a general poultry bill which would provide for production and marketing controls; and to urge instead the passage of the Turkey Enabling Act (S1395) which does not have these control features.

Much concern was expressed regarding what action governmental agencies might take in regard to regulation of food additives, processing methods and other matters that might have an unfavorable effect on turkey markets. A resolution was adopted reaffirming NTF policy of "doing everything possible to assure top quality turkey products for the consumer, and urging that no federal regulations be instituted with regard to quality turkeys and turkey products until adequate evidence is obtained indicating positively such regulations are necessary to insure this quality."

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Distributor for Feed Additives Is Formed

BOZEMAN, MONT.—A new company, serving as distributor of feed additives and ingredients for the feed industry in the mountain West, has been formed. Raleigh D. Yuhas, general manager of the firm, said the company would headquarter at Bozeman, and will be known as Nutrition & Supply Service. Mr. Yuhas will serve as manufacturers representative in Montana, Idaho, northern Wyoming, western South Dakota and eastern Washington and Oregon.

Raleigh D. Yuhas

The firm will handle a complete line of feed additives, including vitamins, antibiotics, minerals, custom and standard premixes and other ingredients.

Mr. Yuhas is a former feed specialist of McKesson & Robbins. He is a graduate of Montana State College.

1959 Canada Feed Shipments Increase

WINNIPEG — Shipments of primary or concentrated feeds in Canada in 1959 increased to 469,699 tons from 437,546 in 1958; secondary or complete feeds increased to 2,614,881 tons from 2,511,812, and all "other" animal feeds jumped to 573,164 tons from 516,140.

December shipments were: Primary feeds, 43,951 tons (41,545 in December, 1958); secondary feeds, 223,458 tons (224,746), and all "other" animal feeds, 49,850 tons (46,782).

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
December 26	930	388	663	637	75	611	1,530	2,140
January 2	1,093	380	913	644	102	687	1,818	2,335
January 9	1,116	451	946	809	130	745	1,940	2,428
January 16	1,045	424	663	722	100	848	2,049	2,230
January 23	1,054	357	656	665	94	885	1,884	2,245
January 30	1,076	418	666	749	117	715	1,980	2,300
February 6	1,035	422	805	787	120	822	1,925	2,261
February 13	1,063	474	805	776	106	694	1,986	2,184
February 20	1,079	415	784	802	131	742	1,987	2,024
February 27	1,059	513	657	712	152	726	1,947	2,216

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
December 26	610	346	2,275	299	4,824	165	2,641	1,843
January 2	1,112	440	2,956	365	5,983	190	2,862	2,267
January 9	1,034	436	2,866	361	6,181	234	3,019	2,168
January 16	1,086	471	2,847	321	6,319	200	3,152	2,207
January 23	1,123	539	2,787	338	6,456	209	3,277	2,149
January 30	1,128	500	2,823	349	6,765	172	3,288	2,420
February 6	1,114	560	2,923	396	6,799	182	3,464	2,352
February 13	1,220	470	3,074	381	7,019	183	3,365	2,482
February 20	1,334	518	3,030	450	6,789	183	3,704	2,448
February 27	1,343	457	3,174	409	6,833	219	3,834	2,281

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1959-60	Total 22 areas 1958-59
December 26	2,770	235	1,409	229	158	1,011	25,789	29,019
January 2	3,334	355	1,759	287	255	1,046	31,173	31,704
January 9	3,761	425	2,043	355	233	1,152	32,325	30,827
January 16	3,450	428	2,133	320	254	1,033	32,303	29,761
January 23	3,484	373	2,112	311	240	1,151	32,408	30,661
January 30	3,578	383	2,175	378	239	973	33,184	31,343
February 6	3,617	401	2,329	407	249	1,119	34,089	31,827
February 13	3,874	364	2,333	385	207	1,131	34,576	32,970
February 20	3,807	391	2,290	302	256	1,117	34,583	33,471
February 27	3,855	398	2,262	288	252	1,066	34,645	34,068

INGREDIENTS

(Continued from page 1)

downward trends. The hardest hit in this respect was linseed meal.

Fish meal prices weakened somewhat, as did brewers' dried grains. And other items were weaker.

Millfeeds in Lead

Taking the lead among the advancing ingredients were millfeeds, which enjoyed a fairly steady demand during the week and supplies were on the light side. Mill running time was reported down over the nation as a whole.

Most millfeed markets showed strengthening tones. Some areas reported gains of $2 ton and more. Middlings, bran and red dog all made substantial advances during the week. Wintry weather stimulated sales of millfeeds in the Southwest, and mills offered only moderate amounts. The millfeeds market at Chicago showed some improvement.

Soybean meal was mostly 50¢ ton stronger, reversing a trend of several weeks duration. The steadiness was reported to have come from reduced supplies of soybean meal and was not necessarily a result of more active demand from manufacturers or feeders.

Demand for linseed meal was extremely slow, and men in the trade said the sharp drop in meal prices reflected, in part, the weakness in the cash flaxseed market.

Most animal protein feeds moved higher. Higher meat and bone meal and tankage prices were encouraged by a top of around $15 cwt. for hogs as compared to around $12.50 in November. Output of these feeds has been slowed somewhat by smaller receipts of hogs.

Corn by-product feeds and molasses were featured by steady prices. Alfalfa meal was mostly unchanged.

Average Bulk Prices and Index of Weighted Prices*
(Dollars per ton)

	Mar. 1, 1960	Feb. 23, 1960	Change from previous week
OILSEED MEALS			
Prices at prin. mkts.:			
Soybean meal	64.80	64.60	+ .20
Cottonseed meal	60.60	61.05	— .45
Linseed meal	69.50	71.65	—2.15
Copra cake or meal	77.25	77.25	...
Peanut meal	55.00	56.00	—1.00
Index	83.7	83.9	— .2
ANIMAL PROTEIN FEEDS			
Prices at prin. mkts.:			
Meat meal	72.75	70.25	+2.50
Tankage	72.30	69.55	+2.75
Fish meal	102.75	104.25	—1.50
Index	68.8	67.4	+1.4
GRAIN HIGH-PROTEIN FEEDS			
Prices at prin. mkts.:			
Gluten feed and meal	47.50	47.50	...
Dist. dried grains	57.20	57.20	...
Brewers dried grains	42.75	45.25	—2.50
Index	75.8	76.2	— .4
WHEAT MILLFEEDS			
Prices at prin. mkts.:			
Bran	40.00	39.40	+ .40
Midds. and shorts	40.95	40.40	+ .55
Index	73.2	72.3	+ .9
OTHER MILLFEEDS			
Prices at prin. mkts.:			
Hominy feed	40.90	40.95	— .05
Rice bran	26.50	29.00	—2.50
Index	61.8	62.7	— .9
ALFALFA MEAL			
Prices at prin. mkts.	56.35	56.35	...
Index	108.5	108.5	...
MOLASSES FEEDING			
Prices at prin. mkts.	21.34	21.34	...
Index	63.5	63.5	...
ALL FEEDSTUFFS			
Index	78.1	77.9	+ .2
FEED GRAINS			
Prices at prin. mkts.:			
Corn	38.90	38.40	+ .50
Oats	48.00	47.40	+ .60
Barley	42.00	42.10	— .10
Grain sorghums	36.40	36.30	+ .10
Index	64.0	63.3	+ .7

*Base period of index is 1947-49.
Source: Agricultural Marketing Service, USDA.

FDA

(Continued from page 7)

extent that their intended use may result in their becoming components or otherwise affecting the characteristics of food. The legislative record specifically states that ordinary packaging materials to provide convenience in handling or storage, are neither food nor food additives. A guaranty relating to a package material which is neither a food nor a food additive would be a meaningless document."

L. L. Ramsey, FDA, said, "If component substances of the packaging material do not add to the packaged food, the answer is simple and direct: Such substances are not food additives as defined by the amendment, and hence no petition with respect to their proposed usage in the packaging material would be required and further the packaging material itself, in toto could be considered to be in compliance with the law."

The association said that the textile bag industry feels its products may be safely used and is prepared to back up its products. The industry feels there need be no apprehension as to the continued use of textile bags for food products.

REPLACING ELEVATOR

OREGON, MO.—New facilities, replacing the main elevator of the Coffman Grain Co. which was destroyed by fire in November, will be ready for use by April. The storage capacity of the new tanks being constructed will be 38,000 bu., 8,000 more than the facilities destroyed by fire. The new plans also include a modern display area.

CREDIT

(Continued from page 7)

to help pay the cost of delinquent accounts, a situation that would develop if interest were included in marginal costs, they said.

Finally, many of the wholesalers declared they did not wish to go into competition with the banks in underwriting loans, and said that while the majority of grain customers were prompt in their payments, it was competition that drove some wholesalers to gain accounts by over-generous credit extensions.

A further complication occurs when mills which have been extended credit pass it on to their retail customers, thereby removing a solution still further from the wholesalers' control. This problem appeared to be a special concern of those dealing with the turkey industry, where in some cases credit has been extended for as long as eight months, or until the birds are marketed.

Because there is no credit association among members of the grain trade, no figures on the extent of the credit problem are available. The practice of granting credit in wholesale grain began after World War II, but has only become a matter of concern for the trade in the past few years.

Members of the new investigation committee will be appointed shortly.

FEED STORE SOLD

TALENT, ORE.—Mr. and Mrs. Albert Grabner have purchased the Bellview Feed Store in Ashland, Ore. The Grabners have been residents of Talent for the past 10 years. Mr. Grabner was formerly with the Bureau of Reclamation on the Talent project. The former owner, Harry Stebler, will continue operation of the Talent Feed Store.

FARROWING

(Continued from page 1)

reported they figured on a revision on the part of others, thereby holding prices down.

The survey, conducted in mid-January, pointed up a 12% increase in sow numbers for the March-May period on 53 Iowa farms in returns from four county swine meetings, an 8.2% boost in one northwest Missouri county and a 4.9% rise in sow numbers in a northeast Iowa county. The sow numbers planned by farmers in these sections before and after the December pig crop estimate were: Four Iowa counties, 913-1,023; northwest Missouri, 656-710, and northeast Iowa, 755-788.

Prior to the issuance of the U.S. Department of Agriculture report, farmers reported intentions to buy 10,020 feeder pigs, but revised plans to 11,875 after the report. An 18.5% rise was reported in both the midwest hog area and fringe states.

The upward rise in January for the Corn Belt averages out to 2.9% in sow numbers for the March-May period. Sow totals changed from 7,664 to 7,887 after the USDA report. This included 381 replies from five states.

However, returns from five farm business associations indicated steady production, mirroring the advice of fieldmen to members to hold production down as planned before the USDA report.

Prices for feeder pigs mushroomed all over the country because of the sudden increase in demand. Most of the increases have ranged from $1 to $2 per head for the 40-lb. pigs.

Production of the 445 farmers taking part in the survey totaled 21,014 litters last year, an average of 46 litters per farm both in the Midwest and fringe areas and 13,033 feeder pigs purchased.

TOP OF THE HOPPER

(Continued from page 2)

total volume approximately one third higher than tonnage presently reported. Other companies, with an even heavier proportion of concentrate production included in its over-all tonnage, would show an even bigger gain in total volume if they projected their concentrate output in this manner.

A rough guess might be that some 65 to 70 million tons of formula feed were turned out in 1959, rather than the approximately 40 million reported by AFMA. Better reporting methods, including specific estimates of concentrate production, are now being incorporated in the AFMA estimating procedure, and the industry can look forward to getting more accurate indications of its growth.

WHAT ARE THE MOST urgent problems of the feed industry in the Philippines? Interestingly enough, they turn out to be a couple of familiar ones: Financing and credit and marketing of end products. This is the report brought back by Jim North, president of Nutrena Mills, Inc., who recently returned from a stint as a consultant in the islands. Jim reports that the Philippines have a fine, if small, start in livestock and poultry production. Some good U.S. breeds have been imported and he predicts that in five to ten years animal agriculture will be well established there.

A PLEA FOR REALISTIC policy on agricultural chemicals was made by Rep. Henry A. Dixon (R., Utah) in the House recently. "Is the government straining at the ridiculous to prohibit infinitesimal traces of many additives without any evidence of their danger to humans, when we eat in quantity other items which produce the same results?" he asked. He also mentioned these situations resulting from the Delaney clause in his suggestion for a sounder approach to controls: Chemical companies are left in a quandary, publicity surrounding the cancer scare is causing financial losses to farmers and others, unpredictability of government reaction to new chemicals threatens to shift research from agricultural to other chemicals, which could create a serious health hazard.

Rep. Dixon is a former president of Utah State Agricultural College.

"I DON'T THINK WE CAN live with a law that says you can't add chemicals to feeds and foods which are essential to growth," Dr. Byron T. Shaw, head of the U.S. Department of Agriculture's research activities, commented the other day. Concerning interpretations of the Delaney clause by FDA, Dr. Shaw said, "I don't think things are quite that black and white." He suggested that the decision as to whether of not a chemical can be added to food or feed should be left to professional, scientific judgment.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Denver: Demand fair; trend steady; supply ample; 2,250 A, 300 D 22¢ lb., f.o.b. Denver.

New York: Demand fair; trend steady; supply ample; 1,500 A, 300 D 16¢ lb.; 3,250 A, 300 D 17½¢ lb.

Boston: Demand slow; supply ample; 400 D, 3,000 A 21½¢ lb.; 300 D, 3,000 A 21¢; 300 D, 2,250 A 19½¢; 300 D, 1,500 A 18¢; 300 D, 750 A 16¢; 75 D, 750 A 15½¢.

Chicago: Demand fair; trend steady; supply ample; straight A feeding oil, with 10,000 units vitamin A per gram, 7@7¼¢ a million units of vitamin A, l.c.l., packed in 55-gal. drums, f.o.b. Chicago, drums included.

Minneapolis: Demand fair; supply ample; 10,000 A 34½¢ lb.; 300 D, 2,250 A 18¾¢ lb.; 300 D, 1,500 A 17½¢ lb.; 300 D, 750 A 16¢ lb.

ALFALFA MEAL

Memphis: Demand poor; supply fair; trend unchanged; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $61.50.

Ft. Worth: Demand good; supply adequate; sacked, dehydrated, 17%, 100,000 A $65.80, rail; $64@65, truck; suncured 13%, ¼-in. grind No. 1 $46, truck; 15% fine ground dry $48, with 2% fat added $50, rail or truck.

Omaha: Demand fair; trend lower; supply ample; 17% dehydrated, 100,000 A units, bulk pellets $53; sacked meal $57, Omaha basis.

Philadelphia: Demand slow; supply fair; 17% dehydrated $68.50.

Cincinnati: Demand slow; trend steady to lower; supply adequate; 17% dehydrated, 100,000 vitamin A $63@64.

Denver: Demand fair; trend steady; supply ample; dehydrated $63, sacked meal; $49, bulk pellets.

New Orleans: Demand fair; trend steady; supply adequate; 17% protein, 100,000 vitamin A, bulk $65@66, sacked $72@73.

Boston: Demand and supply fair; dehydrated, 17% $68.50, sacked; suncured, 13% $46, bulk.

Los Angeles: Demand slow; trend unchanged; supply adequate; dehydrated meal, 17% protein, 100,000 A $56@57; dehydrated pellet meal, 17% protein, 100,000 A $58@59; suncured meal, 15% protein $51@52; suncured crumbles, 15% protein $53@54.

Portland: Demand slow; supply ample; trend unchanged; suncured, 15% $47; dehydrated $62.40.

Minneapolis: Demand still slow, but trend steady; 17% dehydrated, 100,000 units vitamin A reground pellets $57; oiled reground pellets $59; sacked $4 more.

Chicago: Demand fair; trend easier; supply adequate; 17% protein, dehydrated, 100,000 units vitamin A $56.57@59; 13% protein, suncured $40.50@41.50.

Buffalo: Demand and supply fair; trend steady; $71, sacked, Boston.

Seattle: Demand fair; trend steady; supply good; 15% protein suncured $50, delivered truck loads, sacked; 136,000 A unit dehydrated $72, delivered truck loads, sacked.

Kansas City: Demand slow; trend steady; supply adequate; 17% dehydrated alfalfa, guaranteed 100,000 A on arrival, reground pellets $55 bulk, pellets $52@54 bulk; 18% dehydrated alfalfa, guaranteed 125,000 A on arrival, reground pellets $56@59 bulk; 20% dehydrated alfalfa, guaranteed 150,000 A on arrival, reground pellets $65; suncured alfalfa, demand slow, ample supplies, 13% pellets $35@35.50 bulk, No. 1 ¼-in. $37.50 @38, No. 2 ¼-in. $35.50, sacked.

St. Louis: Demand slow; trend steady; supply ample; suncured, 13% fine, sacked $44; dehydrated, 17%, 100,000 A pellets $56.50, bulk.

ANIMAL FAT (STABILIZED)

Boston: Demand slow; supply plentiful; tallow 5½¢ lb.; yellow grease 5¢ lb.

Ogden: Supply ample; $5.50 cwt.

New Orleans: Demand fair; trend easy; supply adequate; 5½@6¢ lb., tank cars.

Ft. Worth: Demand good; supply limited; prime tallow, tank cars 6¾¢ lb.; drums 8¾¢ lb., f.o.b. north Texas packing plants with returnable drums.

San Francisco: Demand fair; supply ample; bleachable fancy 6¼¢ lb.; yellow grease 5¢ lb.

St. Paul: Demand good, mostly because of export market; supply ample, but no one holding big inventories; bleachable fancy up another ½¢ to 5¾¢ lb., f.o.b. producer's plant.

Chicago: Demand good; trend firm to higher; supply light; tank, truck or carlots, bleachable fancy tallow $5.62½ cwt.; yellow grease $5 cwt.

Kansas City: Demand slow; trend steady; supply ample; stabilized prime tallow 5@ 5¼¢ lb.

Louisville: Demand fair; trend steady; supply good; bleachable white 5¾¢ lb., white tallow 6¢ lb., yellow grease 5¾¢ lb., all in tanks.

BARLEY FEED

Los Angeles: Demand slow; trend firmer; supply adequate; standard rolled $2.93 cwt.; standard ground $2.93, cwt.; both sacked.

Philadelphia: Demand slow; supply fair; $46.

Denver: Demand good; trend firm; supply fair; rolled $2.05 cwt.

New Orleans: Demand slow; trend unchanged; supply adequate; $50@51, sacked.

Boston: Demand slow; supply adequate; $49, sacked.

Ogden: Supply good; rolled $45@46; whole barley $40@43.

Portland: Demand slow; supply ample; trend unchanged; rolled $53, ground $51.

San Francisco: Demand fair; supply ample; rolled $60, ground $59.

Baltimore: Demand good; supply fair; trend unchanged; $48.50

Chicago: Demand good; trend firm; supply moderate; $38, sacked.

Seattle: Demand fair; trend steady; supply good; $46, truck lots.

BENTONITE (SODIUM)

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30 ton carlots: 80 granular $31.50, less than carlots $40; 200 mesh fine $31, less than carlots $40.

Denver: Demand fair; trend slow; supply ample; $22.50, f.o.b. Denver.

Chicago: Demand fair; trend steady; supply ample; f.o.b. Wyoming and South Dakota shipping points: granular, 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50, f.o.b. Belle Fourche, S. D., minimum 30-ton carlots, 80 granular $13.50 net; 200 mesh, fine $13.25, net.

BLOOD FLOUR

Louisville: Demand fair; trend steady; supply good; $82.50@87.50, sacked.

BLOOD MEAL

Portland: Demand slow; supply ample; trend unchanged; $112.

Los Angeles: Demand good; trend steady; supply tight; $6 a unit of ammonia, sacked.

Omaha: Demand and supply fair; trend improving; 80% $100, sacked, Omaha.

Ogden: Supply good; $90 ton in 100 lb. bags, f.o.b. Ogden.

New Orleans: Demand slow; supply ample; trend steady; $82.50@87.50, sacked.

San Francisco: Demand fair; supply ample; $6 a unit of ammonia, sacked.

Chicago: Demand fair; trend firm; supply moderate; 100 lb. sacks, 80% protein $120.

Louisville: Demand fair; trend firm; supply good; $82.50@87.50, sacked.

BONE MEAL (STEAMED)

Cincinnati: Demand fair; trend steady; supply ample; $115, sacked, Cincinnati.

Boston: Demand steady; supply light; $105, sacked.

Denver: Demand fair; trend steady; supply ample: $109, Denver.

Ft. Worth: Demand good; supply extremely light; $100, sacked, f.o.b. Ft. Worth, local manufacture.

New Orleans: Demand fair; trend easy; supply ample; $85@90, sacked.

Los Angeles: Demand limited; trend firmer; supply adequate; imported $82, 20-ton lots, sacked.

Portland: Demand slow; supply ample; trend unchanged; $99.

San Francisco: Demand good; supply ample; $75, sacked.

Chicago: Demand fair; trend steady; supply light; 100 lb. sacks $102.50.

Buffalo: Demand good; trend steady; supply limited; $105, sacked.

Seattle: Demand good; trend firm; supply limited; $90, ex-dock, sacked.

Louisville: Demand slow; trend steady; supply normal; $90@95, sacked.

BREWERS DRIED GRAINS

Los Angeles: Demand slow; trend unchanged; supply adequate; $50.50.

Ft. Worth: Demand fair; supply sufficient; 26% protein $54.90, sacked, March.

Cincinnati: Demand fair; trend steady; supply adequate; $48.50.

New Orleans: Demand fair; trend easy; supply good; $52@53, sacked.

New York: Demand moderate; trend lower; supply fair; $46, bulk; $52, sacked; Boston.

Boston: Demand good; supply adequate; 26%, bulk $46.50; 24%, sacked $51; 22%, sacked $50.

Philadelphia: Demand dull; supply fair; $48.

San Francisco: Demand fair; supply ample; $54, sacked.

Chicago: Demand fair; supply ample; trend unsettled; $33@37.

Buffalo: Demand fair; trend steady to lower; supply good; $45.50, Boston.

St. Louis: Demand fair; trend weak; supply adequate; $40.

Louisville: Demand fair; trend steady; supply good; $48, sacked.

BREWERS DRIED YEAST

Los Angeles: Demand slow; trend unchanged; supply adequate: 10¢ lb., 5-ton lots; 11¢ lb., 1-ton lots; 12¢ lb., less than ton lots; all sacked.

Boston: Demand and supply steady; 10¢ lb.

Cincinnati: Carlots 11¢ lb.; 5-ton lots 11¢ lb.; ton lots 11¾¢ lb., sacked.

Denver: Demand light; trend steady; supply ample; 8¢ lb., f.o.b. Golden, Colo.

Omaha: 10¾¢ lb.

Portland: Demand good; supply ample; trend unchanged; 8½¢ lb.

San Francisco: Demand fair; supply good; 10¢ lb., sacked.

Chicago: Demand fair; trend steady; supply ample; 9½@10¢ lb., carlots, sacked; 9¾@12¾¢ lb., l.c.l.

Milwaukee: Demand fair; trend steady; supply ample; 10½@12¾¢ lb., ton lots.

St. Louis: Demand fair; trend firm; supply ample; 9¾@10¢ lb., carlots, sacked; 10½¢ lb., ton lots; 11½¢ lb., less than ton lots.

Buffalo: Demand better; trend firm; supply ample; $9.75 cwt.

Seattle: Demand slow; trend steady; supply ample; $12 cwt., sacked.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New York: Carlots 9¾¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10¼¢ lb.; ton lots 11¢ lb., all sacked, f.o.b. New Jersey

Louisville: Demand slow; trend steady; supply good; 10@10¼¢ lb., sacked.

BUTTERMILK (CONDENSED)

Los Angeles: Demand slow; trend unchanged; supply adequate; 5½¢ lb., 100 lb. lots; 4¾¢ lb., 500 lb. lots; both in barrels.

Boston: Demand and supply steady; 2.95¢ lb.

Ogden: Supply good; $4.40, 100-lb. drum.

Philadelphia: Demand slow; supply light; $4.25 cwt.

New Orleans: Demand slow; trend unchanged; supply adequate; $4.20@4.25 cwt.

San Francisco: Demand fair; supply good; $5 cwt., drums.

Chicago: Demand quiet; trend steady; supply ample; $3.50@3.75 cwt., barrels.

Louisville: Demand dull; trend steady; supply nil; $4.35 cwt. in paper drums, nominal.

CALCITE CRYSTALS AND FLOUR
(All prices net, sacked, including freight)

New York: Crystals $16.28, flour $10.28.
Buffalo: Crystals $17.11, flour $11.11.
Toledo: Crystals $15.96, flour $12.96.
Boston: Crystals $17.63, flour $11.63.
Lime Crest, N.J.: Crystals $11.80, flour $5.50.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $7@7.50 cwt.

Los Angeles: Demand slow; trend unchanged; supply adequate; flour $10.15, 20-ton cars; meal $11.15, 20-ton cars; both sacked.

Seattle: Demand and trend steady; supply good; $14, ex-warehouse, sacked.

Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100-lb. bags $9.54; bulk, in hopper cars $7.54; bulk, in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50-lb. bags $12.25, 100-lb. bags $11.50; bulk, boxcar $10; bulk, hopper $9.50; coarse grind $1 premium, delivered Minneapolis.

CHARCOAL

Boston: Demand and supply steady; $110.

Los Angeles: Demand fair; trend unchanged; supply adequate; hardwood poultry: $156, less than ton lots, sacked; $144.40, ton lots, sacked.

San Francisco: Demand steady; supply ample; $141, sacked.

Chicago: Demand fair; trend firm; supply fair; 50-lb. multiwalls $110.

COCONUT OIL MEAL

San Francisco: Demand good; supply tight; solvent $69.50.

Portland: Demand slow; supply ample; trend unchanged; $80.50.

Los Angeles: Demand limited; trend much weaker; increased offerings; copra cake $75.

Seattle: Demand fair; trend firm; supply limited; $80, delivered, truck, sacked.

COD LIVER OIL (FORTIFIED)

New York: Demand fair; trend steady; supply satisfactory; 1,500 A, 300 D 16½¢ lb.; 3,000 A, 300 D 20¢ lb.

Boston: Demand and supply steady; 300 D, 3,000 A 22¢ lb.; 600 D, 2,250 A 20½¢; 300 D, 2,250 A 20¢; 600 D, 1,500 A 19¢; 300 D, 1,500 A 18½¢.

CONDENSED FISH SOLUBLES

Boston: Demand and supply good; 4¾¢ lb.

Denver: Demand poor; trend steady; supply ample; dried $132, Denver.

New Orleans: Demand light; trend easy; supply fair; 50% solid $42.50@45, f.o.b. Gulf.

New York: Demand fair; trend lower; supply adequate; $35@37.50, f.o.b. Gulf and Atlantic shipping points.

Los Angeles: Demand slow; trend unchanged; supply adequate; 2¾¢ lb.

CORN GLUTEN FEED AND MEAL
(All quotations for all cities are bulk basis, sacked basis $5 more)

Minneapolis: Feed $45.60, meal $66.60.
Atlanta: Feed $49, meal $70.
Birmingham: Feed $47.60, meal $68.60.
Boston: Feed $50.50, meal $71.50.
Chicago: Feed $39, meal $60.
Cleveland: Feed $46.90, meal $67.90.
Denver: Feed $49.20, meal $70.20.
Ft. Worth: Feed $47.70, meal $68.70.
Indianapolis: Feed $44.20, meal $65.20.
Kansas City: Feed $39, meal $60.
Louisville: Feed $45.80, meal $66.60.
New Orleans: Feed $48.90, meal $69.90.
New York: Feed $50.10, meal $71.10.
Norfolk: Feed $49.50, meal $70.50.

CORN OIL MEAL

Cincinnati: Demand fair; trend steady; supply adequate; $45.

Louisville: Demand slow; trend unchanged; $55.45, sacked.

COTTONSEED OIL MEAL

Cincinnati: Demand poor; trend steady; supply adequate; $65.

Ogden: Supply good; 41% $70@72.

Philadelphia: Demand slow; supply fair; $70.

Wichita: Demand good; supply sufficient; 41% old process $69, sacked.

Ft. Worth: Demand good for meal, excellent for pellets and hulls; supply sufficient on meal and light on hulls; 41% old process $65, f.o.b. mills, Ft. Worth; carlots, solvent, 2% fat added $59.60, delivered Ft. Worth; pellets $3 additional; cottonseed hulls $16.

Boston: Demand and supply fair; $70.

Los Angeles: Demand slow; trend unchanged; supply adequate; $71@72.

Omaha: Demand and trend steady; supply ample; 41% solvent $63, delivered Omaha.

Seattle: Demand good; trend steady; supply limited; 41% expeller process $82, delivered truck lots.

Chicago: Demand fair; trend irregular; supply ample; Memphis: hydraulic $55, solvent $53.

Buffalo: Demand fair to poor; trend steady to lower; supply adequate; $73.50, sacked, Boston.

St. Louis: Demand slow; trend steady; supply adequate; solvent $56.50.

Kansas City: Demand improved; trend firmer; supply adequate; 41% old process $54@55, Memphis; 41% solvent process $52.50@53, Memphis.

Louisville: Demand slow; supply normal; old and new process $63.50, sacked.

New Orleans: Demand slow; supply ample; trend steady; bulk $72.90@73.30, sacked $76@77.

Portland: Demand slow; supply ample; trend unchanged; $75.

Memphis: Demand poor; trend steady; supply ample; prime 41% protein, old process $54; new process, 41% solvent $52.50.

Denver: Demand fair; trend steady; supply ample; 2% $62.40, Denver.

San Francisco: Demand good; supply tight; 41% $71, 44% $76.

CURACAO PHOSPHATE

New York: $48, sacked; $46, bulk; f.o.b. New Orleans, Jacksonville or Philadelphia.

D ACTIVATED ANIMAL STEROL (POWDERED)

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 10¢ lb. warehouse.

Kansas City: Demand fair; trend steady; supply adequate; 1,500 ICU 9¾¢ lb.; 3,000 ICU 11¢ lb.

D ACTIVATED PLANT STEROL (POWDERED)

Chicago: Demand fair; supply ample; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots, less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 23¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload $66.26, sacked, 100-lb. multiwall bags, bulk $63.26; truckload $67, sacked, in 100-lb. multiwall bags, bulk $64, f.o.b. Coronet, Fla.

Tupelo, Miss.: Minimum phosphorus 14%, minimum calcium 28%, maximum fluorine .14% $57.07, f.o.b. Tupelo in 100-lb. multiwall bags, $54.07, bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum 36%, maximum fluorine .18% $71.80 (or $3.99 per unit of P), f.o.b. Wales in 100-lb. multiwall bags, $3 less in bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine 3.0% $74.35 net ton, f.o.b. Houston, 100 lb. multiwall bags; $71.35, bulk.

Cincinnati: 18% phosphorus $81.02; 14% phosphorus $71.03, f.o.b. Cincinnati.

DICALCIUM PHOSPHATE

Trenton, Mich.: 18½% P $83, bulk, boxcar/hopper car; $86, bagged, in carloads or truckloads; $96, bagged, in less than carload lots; 21% P, $94.65, bulk, boxcar/hopper car; $97.64, bagged in carloads or truckloads; $107.65, bagged, less than carload; all prices f.o.b. Trenton, freight equalized with nearest producing point.

Chicago: Bulk 18.5% phosphorus, carlots or trucks $83; 20,000 lb. or more $86 net ton in 100-lb. papers; less than 20,000 lb. $96, basis Chicago Heights, Ill., or Nashville, Tenn.; 21% phosphorus, carlots or trucks, bulk $94.65; 20,000 lb. or more, per net ton in 100-lb. papers, $97.65 and less than 20,000 lb., $107.65, basis Chicago Heights, Ill., or Nashville, Tenn.

Bonnie, Fla.: Minimum phosphorus 18½%, granular, $86 (or $4.62 unit of P), freight equalized from nearest producing point, carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices: for delivery at established railroad stations and by truck at regular feed mixing plants: California, Arizona, Nevada and Utah, $99.90; Washington, Oregon, Montana and Idaho, $107.15; bulk carloads $3 less; truck loads less than 10 tons, $10 more.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum calcium 24% $86, f.o.b. Columbia, in 100 lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Texas City, Texas: Minimum phosphorus 18.5%, minimum calcium 20%, maximum calcium 23%, maximum fluorine .12%; carload and truckload $80.50, sacked, in 100-lb. multiwall bags, bulk $77.50, f.o.b. Texas City.

Portland: Demand slow; supply ample; trend unchanged; $112.

Cincinnati: 18½% phosphorus $92.15, f.o.b. Cincinnati.

Denver: Demand fair; trend slow; supply ample; $95.80, f.o.b. Denver.

DISTILLERS DRIED GRAINS

Cincinnati: Demand poor; trend steady; supply adequate; by truck, dark $58, light $57.50.

Boston: Demand active; supply tight; $58.

Philadelphia: Demand slow; trend unsettled; supply light; $58.

San Francisco: Demand fair; supply ample; solubles $55, sacked.
Seattle: Demand fair; trend firm; supply ample; $69, delivered truck lots, sacked.
Buffalo: Demand fair; trend steady; supply adequate; $69, Boston.
Louisville: Demand slow; trend weak; supply good; bourbon grains: light $54@55, dark $55@56, solubles $77, all sacked.

DRIED BEET PULP

Ft. Worth: Demand slow; supply sufficient; 50 lb. papers $54, 30 days' shipment, delivered Ft. Worth.
Los Angeles: Demand slow; trend unchanged; supply adequate; $47.50@49.40.
New Orleans: Demand fair; trend steady; supply adequate; $54@55, sacked.
Portland: Demand good; supply ample; trend unchanged; $56.40.
Boston: Demand slow; supply adequate; $55, sacked.
Ogden: Supply ample; $41@46.
Denver: Demand excellent; trend very strong; supply nil; $32.50, bulk, f.o.b. Colorado factories; $34.50, pellets, f.o.b. Colorado factories.
San Francisco: Demand good; supply fair; $42.80.
Seattle: Demand good; trend firm; supply limited; $52, delivered carlots, sacked.
Buffalo: Demand and supply fair; trend higher; $54, sacked, Boston.

DRIED BUTTERMILK

New Orleans: Demand fair; trend steady; supply ample; $13@13.50 cwt.
Los Angeles: Demand improving; trend firmer; supply scarce; 13½¢ lb., sacked.
Boston: Demand good; supply short; 14¢ lb.
Ogden: Supply ample; $17.25 cwt.
San Francisco: Demand fair; supply ample; 11½¢ lb., sacked.
Chicago: Demand slow; trend steady; supply ample; medium acid $12@12.50 cwt., sweet cream $12@12.50 cwt., both sacked.
Buffalo: Demand and supply fair; trend steady; $13.65 cwt.

DRIED CITRUS PULP

Los Angeles: Demand slow; trend unchanged; supply adequate; orange pulp $40, lemon pulp $38.
New Orleans: Demand fair; trend easy; supply normal; $32.50@35, f.o.b. Florida.
Boston: Demand improved; supply adequate; $32.50, sacked, f.o.b. Florida.
San Francisco: Demand and supply fair; meal $49, sacked.
Buffalo: Demand and supply fair; trend steady to higher; $33, sacked, f.o.b. Florida points.

DRIED SKIM MILK

Los Angeles: Demand slow; trend unchanged; supply adequate; 15¢ lb., less than ton lots, sacked; 14¾¢ lb., ton lots, sacked.
New Orleans: Demand slow; trend unchanged; supply ample; $13.50@14 cwt., sacked.
Boston: Demand active; supply scarce; 12¢ lb., nominal.
Ogden: Supply ample; $15.15, 100-lb. drum.
Philadelphia: Demand slow; supply light; $12.50 cwt.
Cincinnati: Demand fair; trend steady; supply adequate; 13@14¢ lb., sacked.
San Francisco: Demand and supply fair; 13¾¢ lb., sacked.
Minneapolis: Supplies very tight; demand fair to poor; price steady; $13.50@13.75 cwt., sacked.
Chicago: Demand slow; trend firm; supply adequate; $12@12.50 cwt., sacked.
Buffalo: Demand fair; trend steady; supply ample; spray $13.85 cwt.

DRIED WHEY

Portland: Demand slow; supply ample; trend unchanged; $5.80 cwt.
Boston: Demand and supply steady; 5½¢ lb.
Los Angeles: Demand slow; trend unchanged; supply adequate; $5.93 cwt., carloads, sacked; $6.23 cwt., l.c.l., sacked.
Ogden: Supply ample; $7 per 100-lb. bag, sacked.
Ft. Worth: Demand fair; supply adequate; carlots, standard $6, sacked, delivered Ft. Worth; $6.25 ton lots, f.o.b. warehouse Ft. Worth.
Philadelphia: Demand slow; supply light; $6.50 cwt.
Denver: Demand fair; trend steady; supply ample; $6.50 cwt.
Wichita: Demand light; supply ample; $6.50 cwt., sacked.
Cincinnati: Demand fair; trend steady; supply adequate; $6 cwt., sacked.
New Orleans: Demand fair; trend easy; supply ample; $6@6.50 cwt., sacked.
San Francisco: Demand steady; supply good; $5.75 cwt., sacked.
Minneapolis: Demand fair; supply ample; price steady at $5.35@5.45.
Chicago: Demand quiet; trend firm; supply fair; $5.75@6 cwt., sacked.
Seattle: Demand and trend steady; supply good; $6.40 cwt., ex-warehouse, l.c.l.
Kansas City: Demand fair; trend steady; supply adequate; regular or partially delactosed $5.50 cwt., producers' points.

FEATHER MEAL (HYDROLYZED)

Boston: Demand and supply steady; $80, sacked, f.o.b. shipping points.
Ft. Worth: Demand good; supply extremely scarce; 85% - 87% protein $72.50@75, sacked, f.o.b. trucks, north Texas plants.
Los Angeles: Demand slow; trend unchanged; supply adequate; $1 a unit of protein, sacked.
Salisbury, Md.: Demand spotty; supply ample; $34, f.o.b.
Atlanta: Demand fair; trend weak; supply adequate; $78.50, f.o.b. Georgia and Alabama producing points.

FISH MEAL

Denver: Demand fair; trend steady; supply ample; $1.75 a unit of protein, f.o.b. West Coast.
New Orleans: Demand dull; trend easy; supply ample; menhaden, 60% $108@112, sacked; scrap $101@106, sacked, both f.o.b. Gulf.
Boston: Demand slow; supply good; $117, sacked.
Los Angeles: Demand slow; trend weaker; supply ample; local production, 60% protein $1.60@1.65 a unit, sacked.
Portland: Demand slow; supply ample; trend unchanged; $1.60 a unit.
Ogden: Supply ample; $1.70 a unit, f.o.b. Coast; 65% $118@117.
Omaha: Demand fair; trend improving; supply ample; 60% menhaden $125, f.o.b. Omaha.
Ft. Worth: Demand fair; supply sufficient; 65% protein $110, sacked, delivered Ft. Worth.
Cincinnati: Demand fair; trend steady; supply adequate; $145.
New York: Demand fair; trend lower; supply satisfactory; 60% menhaden meal $100, sacked, f.o.b. shipping points.
San Francisco: Demand slow; supply ample; $1.60 a unit of protein, sacked.
Minneapolis: Market fairly steady; Gulf menhaden $132, sacked, truck lots; 70% herring $1.70 a unit protein, f.o.b. West Coast; 60% blended $128@130, sacked, delivered Minneapolis.
Seattle: Demand fair; trend weak; supply good; $1.70, a unit protein, delivered truck lots, sacked (Canadian production).
Buffalo: Demand just fair; trend easier; supply ample; 60% protein menhaden $130 bulk, $135 sacked.
Chicago: Demand poor; trend unsettled and lower; supply plentiful; eastern menhaden, meal $103@108, scrap $99@104; Gulf menhaden, meal $100@106, scrap $96@102; Canadian herring meal $1.55@1.70 a unit of protein.
Louisville: Demand slow; trend easy; supply normal; $145, sacked.

HAY

Ft. Worth: Demand fair for alfalfa, very slow for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $40@42, No. 2 $38@40; No. 2 prairie $24@26; No. 2 Johnson grass $22@24, delivered Texas common points.
Denver: Demand and trend good; supply fair; $31, new hay first cutting; $31@32, new hay third cutting, alfalfa baled.
Wichita: Demand good; supply insufficient; prairie $23@26; alfalfa $32@34, baled.
Philadelphia: Demand slow; supply light; $24@25.
Cincinnati: Demand slow; trend steady; supply adequate; No. 1 timothy $24@25; alfalfa clover mixed $27.50; No. 1 red clover $26@27; alfalfa, first cutting $32, second cutting $25; wheat or oat straw $18@20.
Ogden: Supply normal; $35, in the barn.
Portland: Demand slow; supply ample; trend unchanged; $38@40, No. 2 clean alfalfa.
Boston: Demand and supply steady; No. 2 timothy $40@42.
Los Angeles: Slow demand with adequate offerings; U.S. No. 1 $43@44; U.S. No. 2 leafy $40@41; U.S. No. 2 green $41@42; U.S. No. 2 $37@39.
Seattle: Demand good; trend easy; supply fair; U.S. No. 2 green alfalfa $38, delivered truck lots, baled.
Louisville: Demand dull; trend steady; supply good; No. 1 hay, any variety $30@35, No. 2 $28@30; straw $18@20.

HOMINY FEED

Memphis: Demand nil; trend steady; supply ample; white $43, yellow $43.
Cincinnati: Demand poor; trend lower; supply adequate; $40.50.
New Orleans: Demand fair; trend easy; supply ample; $46.50@48.50, sacked.
Boston: Demand fair; supply ample; $48.
St. Louis: Demand slow; trend steady; supply ample; yellow $37.
Buffalo: Demand and supply fair; trend steady to lower; $48, Boston.
Chicago: Demand improved; trend higher; supply fair; $38.50.
Seattle: Demand fair; trend steady; supply limited; $53, delivered carlots, sacked.
Kansas City: Demand steady; trend steady to firmer; supply ample; white or yellow $32@33.
Louisville: Demand slow; trend easy; supply normal; $47@48, sacked.

LINSEED OIL MEAL

Boston: Demand slow; supply adequate; $81.
Minneapolis: Demand continues on slow side; big drops in price since last week in both solvent and expeller meals; new process off $4@4.50 to $55.50; old process down $4.50 to $66.
Portland: Demand slow; trend lower; supply ample; $89.25.
Philadelphia: Demand dull; supply fair; trend unsettled; 34% $75.
Wichita: Demand fair; supply sufficient; 34% $82, sacked.
Ft. Worth: Demand slow; supply sufficient; 34% protein, solvent $74, rail, March.
Los Angeles: Demand slow; trend firm; supply limited; local production, 31% protein $75.
Cincinnati: Demand poor; trend lower; supply adequate; new process $57; old process $68.50, Minneapolis.
Denver: Demand poor; trend steady; supply fair; $74.30, Denver.
New Orleans: Demand slow; trend easy; supply ample; $91.40@91.90 bulk, $96@96.50 sacked.
San Francisco: Demand fair; supply ample; $76.
Kansas City: Demand poor; trend weak; supply ample; solvent process $54@55; old process $66@66.50, Minneapolis.
Seattle: Demand fair; trend firm; supply limited; 31% protein (California) $93, delivered carloads, sacked.
Chicago: Demand poor; trend down sharply; supply adequate; solvent $55, expeller $67, Minneapolis.
Louisville: Demand slow; trend easy; supply normal; old process $84.50, new process $73.50, both sacked.

LIVER & GLANDULAR MEAL

Omaha: Demand fair; trend improving; supply tight; 65% $175, sacked, Omaha.

MALT SPROUTS

New Orleans: Demand fair; trend easy; supply ample; $43.50@45, sacked.
Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $34.
Boston: Demand and supply limited; $48, sacked.
Chicago: Demand fair; trend firm; supply ample; $32.

MEAT AND BONE MEAL

Boston: Demand slow; supply ample; $1.15 a protein unit; converted 50% $70.
Los Angeles: Demand slow; trend steady; supply adequate; 50% protein $1.65 a unit.
Omaha: Demand and supply good; trend strong; $75.
Ft. Worth: Demand good; supply light; meat and bone, 50% $77@78, f.o.b. Ft. Worth.
St. Paul: Demand good; supply ample; buying interest improved over last week, but stronger prices mostly due to higher tags on scarce raw materials; market gained $4@6 during week; March 3 quotation $74@78.
Denver: Demand good; trend firmer; supply ample; 50% $70, sacked, truck lots; $67, bulk lots.
Wichita: Demand fair; supply sufficient; 50% $82, sacked, f.o.b. plant; 55%, no quotations, no offerings.
New Orleans: Demand slow; trend easy; supply ample; $82.50@87.50, sacked.
New York: Demand fair; trend slightly lower; supply good; 50% $70, sacked; 55% $77, sacked, New York.
Ogden: Supply ample; $76 ton, 50% protein, in 100-lb. bags.
Cincinnati: Demand good; trend steady; supply fair; 50% meat and bone scraps $76, Cincinnati.
Portland: Demand fair; supply ample; trend unchanged; $1.39 a unit.
San Francisco: Demand fair; supply ample; $1.45 a unit of protein.
Seattle: Demand good; trend steady; supply ample; 50% protein $77.50, ex-warehouse, sacked.
Chicago: Demand and supply fair; trend steady; 50% protein, 100 lb. sacks $80.
St. Louis: Demand good; trend higher; supply tight; $77.50.
Kansas City: Demand good; trend firm; supply ample; 50% $72.50.
Louisville: Demand good; trend strong; supply ample; $85@90, sacked.
Buffalo: Demand good; trend stronger; supply ample; 50% meat scraps $75 bulk, $80 sacked.

MILLFEED

Minneapolis: Millfeed traders are smiling this week because of fairly steady demand and light supplies; middlings up a good $3 to $60, sacked; bran up $1@1.50 to $40, sacked; red dog up $3@4 to $44.
Kansas City: Demand good; trend strong; supply tight; sacked, bran $38@38.50, shorts $38@38.50; bulk, bran $33.50@34, shorts $36@36.50, middlings $35.50@36.
Wichita: Demand improved; supply adequate; basis Kansas City: bran $36.25@36.75, shorts $36.25@36.75, sacked.
Ft. Worth: Demand good; offerings limited for immediate delivery bran $43.50, burlaps $46.50; gray shorts $44.50@45, burlaps $47.50; bulk middlings $44.50@45, delivered Texas common points.
Chicago: During the week ending March 2 bran and middlings moved up about $2 ton, just about matching the action for the week ending Feb. 10. Light running time on the part of mills has been largely behind the price action in these two commodities although the runup was also helped a little by a moderate broadening in demand. The bulk of the call has been for nearby shipment and interest in deferred bran and middlings has been at a minimum. Red dog did not share in the recovery. Quotations, bulk: standard bran $36.50, middlings $39.50, red dog $41.
St. Louis: Demand good; trend higher; supply adequate; sacked, bran $43.50, shorts $42; bulk, bran $38.50, shorts $41, middlings $40.50.
Omaha: Demand good; trend stronger; supply ample; sacked bran $36.50; sacked gray shorts $36.50; bulk standard midds. $34.50, all Omaha basis.
Cincinnati: Demand fair; trend of bran steady, middlings higher; supply adequate; bran $42, middlings $44.
Boston: Demand cautious; supply spotty; bran $47, middlings $48.
Buffalo: Mixers' business was a shade better last week, and with pressure from the Midwest off local levels, consumers stepped in the market. Prices advanced and buyers bought right to the top of the range, although sales at the top were in dribbles. However, competition from Canada has begun to appear and if offerings are made in volume it could take the New England market away from Buffalo. There was a little pick up in dairy business from New York state and New England. Last week was the first week in a month that the trade hasn't received delay orders from consumers. The sacked differential on bran and middlings narrowed to $4.50 from $6.50. Bulk bran and middlings ended up $1@1.50; sacked bran and middlings were unchanged to 50¢ lower. Red dog commanded only a token premium over middlings and bulk and sacked ended about unchanged. Quotations March 2: bulk bran $39.50@42, sacked $44@46.50; bulk middlings $40.50@43.50, sacked $45@48; bulk red dog $41@42, sacked $45@47.
Philadelphia: Demand dull; trend unsettled; supply fair; bran $47.50, standard midds. $48.50, red dog $50.
New Orleans: Demand good; trend easy; supply ample; sacked, bran $42@43.75, shorts $43@43.75; bulk, bran $43@43.75, shorts $44@44.75, middlings $44@44.75.
Memphis: Demand good; trend higher; supply short; wheat bran $39.70, gray shorts $41.20, standard midds. $41.20.
Louisville: Demand fair; trend stronger; supply ample; bran $48.25, mixed feed $48.25, shorts $49.25, all sacked.
Seattle: Demand fair; trend steady; supply good; $36, delivered common transit points, carlots.
Portland: Demand slow; supply ample; trend lower; $34.
Ogden: Supply ample; to Utah and Idaho: red bran and mill run $34, middlings $39; to Denver: red bran and mill run $41, middlings $46; to California: red bran and mill run $41.50, middlings $46.50, f.o.b. San Francisco and Los Angeles.
Denver: Demand good; trend steady to strong; supply limited; shorts $39.75, bran $39.75, mill run $39.75.
Los Angeles: Standard mill run $42.50@43.50, slow demand, firmer trend, smaller offerings; red bran $48, slow demand, firmer trend, ample supplies.
San Francisco: Demand slow; supply ample; millfeed $42.50, red bran $47.50.

MINERAL FEED

Ft. Worth: Demand fair; supply sufficient; all-purpose granules $90, block $97; mineral phosphorus 6% granules $106, block $113; cattle-sheep mineral, 7% phosphorus granules $100, block $107; hog mineral phosphorus 3½% granules $87, phosphorus 2% $77 (all in 50 lb. paper bags).
Portland: Demand slow; supply ample; trend unchanged; $45.
Ogden: Supply good; $113 ton, 50 lb. blocks; $103 ton, granular, 50 lb. bags.
Denver: Demand fair; trend slow; supply ample; $100.
Wichita: Demand heavy; supply adequate; all-purpose with iodine, 50 lb. blocks $97.50; 100 lb. bags $92.50, f.o.b. plant.
San Francisco: Demand steady; supply good; all-purpose with iodine $70, sacked.
Seattle: Demand fair; trend steady; supply good; mixer mineral $48, ex-warehouse, sacked; all-purpose mineral $85, ex-warehouse, sacked.
Sioux City: 50-lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

MOLASSES

Boston: Demand active; supply plentiful; 14¢ gal., tank cars.
Minneapolis: Slight weakness noted because of slow demand from feed manufacturers; down 50¢ from last week to $28, tank truck, delivered.
Ft. Worth: Demand good; supply sufficient; blackstrap 10¢ gal., f.o.b. Houston; delivered Ft. Worth, truck $23.80, seller's market price on date of shipment.
Denver: Demand fair; trend steady; supply ample; 9¼¢ gal., New Orleans; $15.82 ton, New Orleans; $19.50 ton, West Coast.
Memphis: Demand good; trend firm; supply ample; blackstrap 9¼¢ gal., tank car, f.o.b. New Orleans; $22.27 ton, delivered, Memphis, truck.
Cincinnati: Demand fair; trend steady; supply adequate; 9¼¢ gal., New Orleans.
New Orleans: Demand good; trend steady; supply ample; 9¾@10¢ gal., tank cars and trucks; 600 lb. customers' drums $6.92.
Los Angeles: Demand good; trend weaker; supply ample; $19.50, f.o.b. tank cars; $19.75, f.o.b. tank trucks.
New York: Demand fair; trend steady;

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supply satisfactory; 14¢ gal., Albany.

San Francisco: Demand and supply good; $19.75, f.o.b. cars, Richmond, Cal.

Seattle: Demand fair; trend easy; supply good; $20.25 ton, f.o.b. Seattle, tank truck lots.

Buffalo: Demand fair; trend steady; supply good; 14¢ gal., f.o.b. Albany.

St. Louis: Demand slow; trend steady; supply ample; 9¼¢ gal., tank car, New Orleans.

Kansas City: Demand fair; trend steady; supply ample; blackstrap 9@9¼¢ gal., f.o.b. tank car, New Orleans.

Louisville: Demand fair; trend steady; supply normal; 9¼¢ gal., tank car lots, f.o.b. Gulf ports.

NIACIN

New York: 50% $1@1.20 lb.

OAT PRODUCTS

Boston: Demand slow; supply fair; white pulverized $57.35, sacked; reground oat feed $31, sacked.

Ft. Worth: Demand slow; supply sufficient; oat millfeed $50.20, reground $29.70 @30.70, March, sacked, new jutes.

Memphis: Demand poor; trend steady; supply ample; 3½% protein, reground oat feed $22.

Minneapolis: Stronger interest this week, feeding rolled up $3 to $31; feeding oatmeal up 50¢ to $68; pulverized steady at $46.50; reground oat feed steady at $30; crimped steady at $61; all sacked prices.

Philadelphia: Trend unsettled; pulverized white, demand slow, supply fair $52; domestic, demand slow, supply light $30; Canadian, demand slow; supply light $33.50, sacked.

Cincinnati: Demand slow; trend steady; supply adequate; reground oats $20; pulverized white oats $45.

Los Angeles: Demand slow; trend unchanged; supply limited; local production, pulverized $69, sacked.

Portland: Demand slow; supply ample; trend unchanged; rolled $60, ground $62, cleaned $60.

Chicago: Demand quiet; trend easier; supply good; reground oat feed $17; No. 1 fine ground feeding oatmeal $74; feeding rolled oats $74.70@79.

Seattle: Demand good; trend firm; supply fair; $56, delivered truck lots, 25-lb. or better.

Louisville: Demand slow; trend easy; supply normal; reground $26.80, rolled white oats $54.80, feeding oatmeal $50.30, pulverized white $53.80, crimped white $67.80, all sacked.

OYSTER SHELL

Boston: Demand and supply steady; $26, paper.

Cincinnati: Demand fair; trend steady; supply adequate; $24.45, sacked.

San Francisco: Demand fair; supply ample; local $15, eastern $26, sacked.

New Orleans: Demand and supply good; trend steady; $24@24.50, papers.

Portland: Demand slow; supply ample; trend unchanged; western $31, eastern $36, granite grits $25, shell flour $21.

Los Angeles: Demand slow; trend firmer; supply ample; $15.40.

Seattle: Demand and trend steady; supply good; eastern $36, delivered carlots, sacked.

Louisville: Demand and supply good; trend firm; in 80-lb. paper sacks $23.45; in 50-lb. paper sacks $23.70; in 25-lb. paper sacks $25.95.

PEAT MOSS

Los Angeles: Demand steady; trend unchanged; supply ample; Canadian 5.6 cu. ft. bales $3.65.

Portland: Demand good; supply ample; trend unchanged; $3.30 a bale.

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Philadelphia: Demand slow; supply fair; $2.99, f.o.b. pier.

Cincinnati: Demand and supply good; truck lots $3.45 a bale, f.o.b. Cincinnati.

Boston: Demand and supply steady; $3.15 a bale.

San Francisco: Demand and supply fair; $3.65 a bale.

Seattle: Demand and supply good; trend firm; $2.55 a bale, delivered truck lots.

Chicago: Demand and supply fair; trend firm; standard 7⅝ cu. ft. bale $3.50.

POTASSIUM IODIDE, U.S.P.

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures: 250-lb. drums $1.35; 200 lb. in 100-lb. drums $1.35; 100-lb drums $1.38; 25-lb. drums $1.41, f.o.b. Cincinnati.

Chittenango, N.Y.: Demand good; trend firm; supply ample; standard blends, 90% KI, 10% stearate or carbonate mixture, 100 lb. drums $1.32 lb.; 200 lb. and up $1.30 lb., all delivered.

POULTRY BY-PRODUCTS

Ft. Worth: Demand good; supply limited; 55% protein $82.50@85, sacked, f.o.b. north Texas plants.

Boston: Demand fair; supply spotty; $69, f.o.b. shipping points.

Los Angeles: Demand slow; trend unchanged; supply adequate; $1.45 a unit of protein, sacked.

Salisbury, Md.: Demand excellent; supply limited; meal $88, f.o.b.

Atlanta: Demand fair; trend weak; supply adequate; meal $79, f.o.b. Georgia and Alabama producing points.

RIBOFLAVIN

Cincinnati: Trend steady; food grade (in feed supplements) 4¢ gram, in less than ton lots in 2.36 to 16 gm./lb. mixtures; 3¢ in ton lots or more; freight prepaid or paid to destination.

New York: $40 kilo in 4 and 16 gm./lb. mixtures.

RICE BY-PRODUCTS

Ft. Worth: Demand slow; supply moderate; rice bran $32, f.o.b. south Texas rice mills; hulls $3.50, sacked, f.o.b. mills.

Los Angeles: Demand very slow; trend steady; supply adequate; California production, high fat content, bran $52, sacked.

San Francisco: Demand good; supply ample; bran $46, polished $49, both sacked.

SCREENINGS

Ft. Worth: Demand good; supply limited; ground mixed grain $28.50@29.50.

Minneapolis: Tight supply situation more acute than ever; some movement in Canadian screenings, improved inquiry; domestic supplies very tight, a few dribbles here and there; Canadian up $1 to $27, Duluth; domestic ranges unchanged; light $13@23, mediums $24@33, heavies $34@43.

Cincinnati: Demand fair; trend lower; supply adequate; unground grain screenings $23.50, delivered, Cincinnati.

Buffalo: Demand and supply fair; trend steady to lower; ground, sacked $43.50, New York; unground, bulk $34, New York.

Chicago: Demand quiet; trend easier; supply fair; ground grain screenings $37 @37.50, Canadian $31.50.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

(Sacked)

Atlanta: $20.40@20.67.
Buffalo: $25.31@25.45.
Chicago: $24.77@24.90.
Cincinnati: $23.47@23.60.
Des Moines: $25.23@25.35.
Kansas City: $24.88@25.
Memphis: $22.20@22.47.
Minneapolis: $25.92@26.06.
Philadelphia: $24.32@24.95.
St. Louis: $24.14@24.27.

SORGHUMS

Ogden: Supply good; milo $42@43.

Ft. Worth: Demand fair; offerings light; No. 2 yellow milo $1.99@2.01, delivered Texas common points.

Los Angeles: Demand better; trend firmer; supply lighter; milo $2.15 cwt.

Seattle: Demand and supply good; trend steady; milo $46, delivered carlots.

SOYBEAN OIL MEAL

Boston: Demand fair; supply adequate; 44% $53, 50% $57, both f.o.b. Decatur.

New Orleans: Demand slow; trend easy; supply ample; bulk $73.70@75.20, sacked $77.75@78.25.

Los Angeles: Demand slow; trend weaker; supply ample; $75.90@76.90.

Ogden: Supply ample; 44% protein $79 @80.

Memphis: Demand fair; trend steady; supply ample; prime 44% solvent $58.50, f.o.b. Memphis.

Minneapolis: Market showing slight strength, due to reduced supplies; more than active demand from feed manufacturers; 44% up 50¢ to $48.50, Decatur.

Ft. Worth: Demand improving; supply sufficient; 44% $65.50@68 March, $66.60@ 69 April-July; 50% protein $71.70 March; $73 April-July depending on origin; trucks: 44% $67@68, 50% protein $74@75.

Philadelphia: Demand and supply fair; 44% $54, Decatur.

Wichita: Demand good; supply sufficient; 44% $66, 50% $72, sacked; 44% $63, 50% $69, bulk, f.o.b. Wichita.

Cincinnati: Demand poor; trend steady; supply adequate; $56, Decatur.

Denver: Demand very poor; trend steady; supply ample; $63, Denver.

Portland: Demand slow; trend weak; supply ample; $48.50, f.o.b. Decatur.

Omaha: Demand fair; trend steady; supply ample; 44% $62, delivered Omaha.

San Francisco: Demand fair; supply ample; $75.90.

Kansas City: Demand fair; trend steady; supply ample; 44% solvent process $53@ 53.50, Decatur.

St. Louis: Demand slow; trend steady; supply abundant; 44% $59.

Seattle: Demand good; trend weak; supply ample; $77, delivered carlots.

Chicago: Decatur, bulk, carlots, 44% protein, unrestricted billing $56.50 and eastern restricted $52@52.50; 50% protein, unrestricted billing $61.50 and eastern restricted $56@56.50.

Louisville: Demand fair; trend easy; supply good; $64.70, sacked.

TANKAGE

St. Paul: Demand good; supply ample; buying interest improved over last week, but stronger prices mostly due to higher tags on scarce raw materials; market moved upward to $74@76, an increase of about $2.

Omaha: Demand and supply good; trend strong; $80.

Cincinnati: Demand good; trend strong; supply ample; 60% digester $78, Cincinnati.

Wichita: Demand fair; supply sufficient; 60% $83, sacked, f.o.b. plant.

Ft. Worth: Demand fair; supply moderate; 60% digester $82, Ft. Worth.

New Orleans: Demand dull; trend steady; supply good; 60% bulk $80.50@82, sacked $83@83.50.

Kansas City: Demand good; trend strong; supply ample; 60% digester $72.50.

St. Louis: Demand good; trend higher; supply tight; $77.50.

Chicago: Demand and supply fair; trend steady; 100 lb. sacks, 60% protein $80.

Louisville: Demand good; trend strong; supply fair; $85@90, sacked.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand extremely good; supply light; 4¾¢ lb., f.o.b. north Texas area.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; any quantity in 100-lb. drums $1.50; in 25-lb. drums $1.55, freight allowed to destination.

WHEAT GERM MEAL

New Orleans: Demand fair; trend easy; supply ample; $64@66, cottons.

Minneapolis: Demand good; supply tight; steady at $54, jutes.

Buffalo: Demand fair; trend steady; supply fair to poor; commercial grade $69, sacked, f.o.b. Buffalo.

FEED MEN

(Continued from page 1)

duction increased, packers, needing hogs for their plants, will integrate and supply feed from their own mills.

● There still seems to be a place in agricultural production and the feed industry for the small operator who does a good job.

● There may be vast changes ahead, but most feed men appear determined to adjust their products and services and methods of operations as changes develop. Some predict that the industry pattern eventually may be similar to that in parts of the West.

● The economics of bulk feeding are determined not just by handling at the farm but all phases of manufacture and distribution of the feed.

Summaries of talks follow:

ORGANIZATION OF AGRICULTURE AND THE FEED INDUSTRY—The basic function of the feed industry is to produce and distribute feed as efficiently as possible. And those who do the best job of this are likely to continue in business.

This was pointed out by Oakley Ray, director of market research for the American Feed Manufacturers Assn., in connection with a talk on integration, feed tonnage and other developments in production and marketing in animal agriculture.

The exact organization of agriculture in the future remains uncertain. Mr. Ray said in the conference keynote talk, but a great deal more feed will be manufactured. The question is who will be doing it in relation to the rest of agriculture. Unless the feed industry is efficient, a large part of the tonnage could go to competing forces.

However, said Mr. Ray, the future appears bright for companies that study new developments carefully and adjust their operations accordingly.

He noted that there will be closer relations between production and marketing. However, we are still in the transition period in agricultural integration, and it is not clear what the final outcome will be. When it appears that integrated programs can improve production and marketing of a given commodity, such programs will develop. But vertical integration will not increase unless it can do a job more efficiently. And losses can be heavy unless the integrators are very efficient. There will be continuing adjustments in this field.

Commenting on contracting, he said that contracts will be more and more on a partnership basis where those involved share in profits and losses. This type of contract results in greater efficiency than where one party has a flat guaranty.

There will be more large owners of various types of enterprises, such as feed manufacturers in marketing. However, the feed industry must be as efficient as possible if it is to retain its position. And it must be noted that a large part of its function is producing and distributing feed efficiently.

While agriculture is going through marked changes, it is not likely to go the route of some other industries where two or three companies control most of the volume—at least not in the foreseeable future, Mr. Ray said. There appears to be a place in both agricultural production and the feed industry for the small operator because the efficiencies of scale of producing and marketing are such that the relatively small operator who does a good job will continue to compete successfully in his own area.

Mr. Ray also presented economic data on a number of industry and agricultural trends, such as: (1) the decrease in the proportion of poultry feed other than broiler and turkey and an increase in recent years in livestock feeds; (2) continued yearly increases in feed volume in the Southeast but frequent decreases from the year before in the Northeast; (3) increases in beef and chicken consumption per capita and a marked percentage increase in turkey consumption, but a continuing decline in egg consumption per capita; almost continuous increases in manufactured feed output in recent years and larger percentage increases than in total concentrates fed.

BROILER COSTS AND PROFITS WITH BIRDS RAISED TO DIFFERENT AGES—Dr. W. R. Luckham, agricultural economist at VPI, told of the results of a study which he and Dr. E. L. Wisman of the poultry department conducted. A total of 1,960 Vantress X Arbor Acres broilers were sexed and were carried to 10 weeks of age. Weekly body weights and feed conversions were calculated. Costs of production were estimated and profitability determined.

It was shown that total cost per pound decreased up to at least 10 weeks of age. (The experiment was conducted for a 10-week period.) Also, total profitability per square foot of floor space per year increased as fewer lots of broilers were grown to the heavier weights at 10 weeks of age.

The philosophy has been to run more birds through a house, Dr. Luckham said, but this test indicates that results are better if birds are fed to 10 weeks of age.

He presented extensive figures on costs and profitability. For example, total cost per pound of broiler sold excluding the sexing charge was, for males, 13.038¢ at 10 weeks and 13.779¢ at 8 weeks. For females, corresponding figures were 13.876 and 14.693¢. A chart also showed that net profit per square foot of space per year was greater at various prices per pound as birds grew older and heavier.

Among other figures in the presentation were these: Males raised to 10 weeks weighed 4.09 lb., feed conversion was 2.38, and total cost per pound was 13.283¢, including sexing charge. Corresponding figures at 8 weeks were: body weight, 2.82 lb.; feed conversion, 2.13; total cost per pound 14.134¢. At a price of 16¢ per pound, net labor and management income per year from broilers was 52.562¢ on the basis of 4.73 lots per year. On the basis of 5.78 lots per year, the figure was 30.415¢. With 5.2 lots per year, it was 41.777¢.

The calculations of costs included, in addition to feed costs, the costs of chicks, sexing, debeaking, medication, heating, litter and miscellaneous (totaling 14.564¢ per bird); plus fixed costs, including building, equipment, interest on investment, taxes, insurance, repairs (totaling 14.65¢ per square foot).

REDUCING WEIGHT OF PIGS AT SLAUGHTER—While it was suggested that broilers be carried to heavier weights to maximize profits, another speaker noted that it might

be worthwhile to reduce the weight of pigs being marketed. He described this as a very real way of increasing the ratio of lean and increasing efficiency.

The speaker, Dr. C. C. Brooks of VPI, cited research on fat development and noted, for one thing, that lean of the carcass decreased 10% as hogs grew from 150 to 200 lb.

As efficiency increases in both the breeding herd and growing pigs, Dr. Brooks said, the cumulative cost per unit of live hog reaches its lowest point in lighter animals. It has been believed that a farmer had to carry hogs to 200 or 250 lb. to get back what he invested in the sow, but efficiency of production increases, cumulative costs per pound are lower at lighter weights. Under present recommended practices, the cumulative cost per unit is lowest between 100 and 150 lb. live weight.

Dr. Brooks said slowness in movement to lighter slaughter weight appears to be due to fear of changing traditional slaughter and merchandising procedures. Available research indicates eating acceptability is not reduced by decreased slaughter weight.

HOW TO LIVE WITH PRESENT EGG SITUATION—"If you and I are going to remain in the egg business," said Dr. R. J. Krueger, "we must (1) keep the cost of production for our producers as low as possible and (2) keep the return for our producers' eggs as high as possible."

This, Dr. Krueger indicated, means certain basic things relative to costs and prices of eggs:

1. Total production cost on eggs produced in the area must be no higher than 30 or 30.5¢ doz.

2. Southeastern feed and poultrymen must stop creating their own price problems in eastern markets.

3. Feed firms must stop subsidizing egg prices in order to buy feed business.

4. They must stop trying to price eggs relative to a local quoted market.

Dr. Krueger, who is poultry specialist for Lindsey-Robinson & Co., Roanoke, elaborated on these various points.

In arriving at a total production cost of 30.2¢ doz., he listed the following as maximum costs per dozen:

Feed—20¢ (From start of lay through 12th month of lay. This might be 4½ lb. feed per dozen at $90 ton or 4 lb. at $100 ton or 5 lb. at $80 ton.)

Pullet cost—7.5¢ per dozen (To do this, performance must be—chick cost, 45¢; feed cost, $1, or 26 to 27 lb. @ $75-80 ton; mortality and culling, 7¢, based on 5% to 22 weeks; vaccination, 2¢; grower payment, to self and other grower, 22¢, or about 1¢ per week; other costs, 4¢, including heat, electricity, etc. This makes a total pullet cost of $1.80 to 22 weeks. Assuming a value of 34¢ for the old fowl, pullet depreciation is $1.46, or 7⅓¢ per dozen based on 19½ doz. eggs.)

Building—1¢ per dozen eggs, or 19 to 20¢ per bird (including interest, depreciation, taxes, repair, insurance).

Equipment—0.7¢ per dozen.

Other—1¢ (including electricity, medication, grit, litter, etc.).

Total—30.2¢ per dozen.

Turning to pricing, Dr. Krueger first told how the southeastern feed and egg industry had created to some degree its own price problem. The area expanded rapidly from a deficit to a surplus area, and marketing efficiency lagged behind production expansion. Eggs backed up in the South and quality dropped, giving the area an immediate reputation for poor eggs.

The industry ran looking for brokers in terminal markets, and New York City became a dumping ground. With initial quality poor and reputation damaged, prices paid were cheap. Dr. Krueger said that many are still running to brokers with their surpluses, that they do not know how to sell to big buyers. Meanwhile, the Midwest also is selling surplus eggs to New York brokers. The southern price is set by the New York market. Big chains in the area base their price on the New York market. Thus, said Dr. Krueger, as southern suppliers run to New York buyers with their surplus eggs, they are creating their own price problems.

It is necessary to go to terminal markets with surplus eggs, he said, but the southern firms should try to work directly with large food store buyers and by-pass the brokers. Then, he said, the situation won't "boomerang" so badly.

Dr. Krueger also said that "if we are to exist, we must stop subsidizing egg prices, stop buying feed tonnage with a subsidized egg price." If feed people can afford to buy tonnage with subsidized egg prices, then (1) there's too much margin in the feed ("we know that's not true"), or (2) "we will lose money and eventually go broke," or (3) profit is being taken from another part of the feed business, meaning there is too great margin there or dairy and swine customers are subsidizing egg feed customers.

"Subsidizing egg prices is not only unsound for feed people," he said, "it is detrimental for producers also because: (1) Subsidized egg price means paying price higher than received; (2) additional supply is brought on by the subsidized price; (3) no one can continually pay more for eggs than he can sell them for, he will go broke or give up, and paying price will then return to normal; (4) when paying price returns to normal, many producers cannot make it and will lose their investment."

The feed men also were advised to stop trying to price eggs relative to a local quoted market. Dr. Krueger noted that the purpose of market news is to report prices paid so that a producer can see whether what he was paid was average. However, if everyone pays a price relative to a quoted market, no one is left to set the market. Then market news people are forced to fabricate some sort of price based on other out-of-state markets such as New York. "We in turn," he continued, "then follow a manufactured price, which after a period of time bears little or no relation to our costs. The long run result is to go broke or get out." The feed man may be buying on a local quoted market and selling on another.

"If we are to be egg handlers for producers," Dr. Krueger concluded, "we must price eggs as follows: What we can sell eggs for, less what it costs us for procurement, processing and distribution."

ECONOMICS OF BULK FEEDING—The economics of bulk feeding are determined not just by handling of feeds at the farm or production unit, but rather by all of the following phases: (1) Ingredient and material receiving and storage; (2) manufacturing; (3) storage and warehousing; (4) distribution; (5) feeding at the farm. This was pointed out by Earl P. Mitchell, sales manager, Red Hat Feed Division, Alabama Flour Mills, Decatur. He said feed men must effect all savings possible in all areas and in turn pass those on to the customer.

Mr. Mitchell listed bulk feed savings for the farmer, including bag cost, labor and other factors, and then went on to make suggestions on several points. Here are some of the "economics" presented:

Size of Production Unit: Should use a minimum of 5 tons of feed every two weeks. It is not economical to make bulk deliveries of less than 5 tons.

Tank Investment: A tank or bin with capacity of less than 5 tons will cost $60-65 per ton of storage; capacity of 5 tons, $45-55; 8 tons, $35-45 per ton. If a feeder has 10 tons of storage and investment per ton is $50, total investment is $500. If there is a savings of $4 per ton in price, the customer would need to use 125 tons to amortize his investment within one year. These figures are based on purchased metal bins.

Distribution: Distribution from plant to bulk depots, dealers or feeders will cost about the same for bulk and bagged feeds. Investment is greater for bulk, but labor savings will usually offset this. Within 75 miles, bulk feed can go directly from plant to dealer or feeder. Beyond that, a bulk station may be more practical. One can't go very far with less than 12 tons; for distances of 50-75 miles, 20 tons is the minimum load. Bulk depots are practical where heavy consumption areas are far removed from the plant and where redistribution in quantities smaller than full truck load deliveries is needed. There is little difference in cost of redistribution of bulk and bagged feeds.

Storage and Warehousing: Mr. Mitchell's firm effects definite savings in storage of bulk as compared to warehousing bagged feed.

Manufacturing: Savings effected in manufacturing bulk are determined largely by labor savings. This relates directly to percentage of total volume manufactured in bulk. Red Hat costs are 25-30% less for manufacturing bulk. This is a result of a large percentage of volume being made and distributed in bulk. Of total volume, 70 to 72% is bulk at the largest plant; virtually 100% at a subsidiary plant. About 98% of poultry feed is in bulk. Bulk distribution of dairy feeds has been initiated, and swine feeds in bulk will follow. At the largest plant, bulk storage totals 375 tons, in 28 bins. (Manufacturing costs discussed by Mr. Mitchell include direct labor costs, operating expense, elevator expense, and all fixed charges.)

Ingredient and Material Receiving: Receiving and storing materials in bulk bring substantial savings, and this applies whether the feeds go out in bags or bulk.

SWINE INDUSTRY — Virginia could, in time, become the heart of the national hog belt if proper swine programs were put into practice throughout the state, one speaker declared. Dr. A. C. Rogers, a practicing veterinarian and president of Smithfield (Va.) Feed Mills, Inc., said that Smithfield packers the past two years have averaged a higher price for hogs than the national average, but are able to get only 10% of their needs from Virginia.

At present, he said, some packers are being forced into integration programs in order to get more hogs for their plants. In these programs they will supply feed from their own mills, gradually eliminating the local feed manufacturer. Dr. Rogers urged promotion of sound hog programs among farmers in the state.

Also commenting on the economics of swine production was R. M. Godsey, swine specialist at VPI. He predicted that the central system of hog production, designed to produce and market from 1,000 to 10,000 or more hogs a year, will continue to increase. The highly specialized system will not replace the farm system where the producer is efficient, however. Mr. Godsey said that central systems now are producing 3 to 5% of the nation's hogs.

In Virginia, he said, the number of central farrowing houses has increased rapidly and now totals 964. Also, 128 pig parlors were built in 1959, and the total of confinement feeding units in the state now is 438. Most of these have central farrowing houses, too.

PLACE OF THE FEED MANUFACTURER IN A CHANGING AGRICULTURE—It has been predicted that we will hardly recognize the feed industry, as we now know it, five years from now, that there will be vast changes in the industry structure and distribution and marketing patterns. However, it appears that most feed men are determined to adjust their products, services and methods of operations to changes as they develop, and to continue to fulfill an important role in agriculture and food production.

These observations were made by Roger Berglund, Feedstuffs, Minneapolis, in a talk based primarily on a special outlook survey of feed manufacturers. (Feedstuffs, Dec. 26)

Among the views of feed men brought out in the survey were these: (1) Expectation of lower margins and profits in 1960; (2) more sharing of risks in integrated operations and possible shifting of more of production responsibility or control to processors and others; (3) in some cases control or ownership of an entire operation rather than contracting; (4) more concern with end product marketing, either directly or through assistance to producers; (5) more feed manufacturers likely to own and operate livestock and poultry feeding enterprises—that is, their own operations, not just contract feeding; (6) a marked tightening of credit in view of heavy credit losses; (7) a majority view that feeder financing by banks and other agencies will not increase in the near future; (8) increased interest in making complete pelleted rations for ruminants; (9) expectation of more sales by feed manufacturers of premixes and super concentrates to feeders and local mixers; (10) at the same time, more sale and use of complete livestock as well as poultry feeds.

It was noted that some persons feel much of the industry eventually may evolve into a pattern similar to that in parts of the West. In one category there might be feed companies which control or own and operate their own production enterprises and market the end product. A second type of operation would be the large poultry or livestock ranch or feedlot which makes its own feed. A third category might include cooperatives or buying groups of substantial feeders who purchase feed on a specification basis at a certain negotiated sum over ingredient costs. More individual purchases on the basis of a certain amount over feed cost also were foreseen.

While predictions of this sort of development are made, others see less extensive changes, and some feel that by doing the best possible job in their basic role of supplying and distributing feed, and assisting in marketing, they will continue to fulfill an important role.

An eastern feed man who replied to the survey commented: "Surely we must have learned enough from all the mistakes of the past two years to progress in the year ahead. If we continue to render a service that is needed, we will survive."

Monsanto Announces Micro-Prilled Urea

ST. LOUIS — Monsanto Chemical Co.'s inorganic chemicals division has announced that it is now making available to feed manufacturers a micro-prilled feed grade urea that is "dust-free and non-caking."

"Each small prill," Monsanto said, "is coated to remain free-flowing under all conditions. The product is compatible with feed formulations and will not settle out."

It is available in 80-lb. multi-wall polyethylene lined bags that are anti-skid treated.

Quad States Grain, Feed Convention Set

SIOUX CITY, IOWA—The Quad States Grain and Feed meeting has been scheduled for March 13-14 at the Sheraton-Martin Hotel, according to an announcement by Chet Wickstrom, president of the group. Trade discussions will take place Monday, March 14.

COLORADO

(Continued from page 6)

ter than with mixed feeds, he maintained that it isn't enough better to warrant the extra processing.

He agreed that pellets have a distinct advantage if feeds must be moved over any distance and that ease of handling is the chief advantage. Some feeder-processors are feeding mixed rations to their own stock and pelleting rations for shipment to other feeders, he noted.

Beef Cattle Pellets

Pelleting—this time for beef cattle rations—also received some attention from Dr. C. D. Story, Colorado State University.

"The big question in feeding pelleted rations to beef cattle is still one of economics," Dr. Story said. He pointed out that in various tests throughout the country, costs have ranged from $3 ton for pelleting to $6 ton for grinding and pelleting. "In some cases, increased gain and improved efficiency of gain have offset added cost of pelleting and in other tests they have not," he noted.

"At the same time, however, in most tests only the nutritional advantages have been considered in the cost-return evaluation. Non-nutritional benefits, such as reduction in feed bulk, simplified handling and reduced costs of transporting and storing feed, have not generally been given a monetary value and applied as a credit to offset some of the extra cost of pelleting," he maintained.

To date, pelleting high-roughage rations, 60 to 100% roughage, appears to be most promising, according to Dr. Story. Cattle feeding experiments have with few exceptions shown increased feed intake, increased daily gains and better feed efficiency, compared with ground, chopped or baled roughage rations, Dr. Story noted.

"Feeding pelleted high-concentrate rations to fattening cattle has given improved feed efficiency, but daily gains and feed consumption have been lower than with similar non-pelleted high-concentrate rations," Dr. Story said. "In general, it appears that 30-40% concentrates in pelleted rations is the optimum level for increased gains and feed efficiency over non-pelleted rations," he added.

Dr. Story warned that cattle on finely-ground roughage pellets or high-concentrate rations, with no access to coarse roughage material, may develop ruminal parakeratosis. This is a condition involving a thickening or encrustation of the rumen wall. At least two pounds of coarse roughage per head per day is essential with cattle on pelleted rations, he said.

FERTILIZED HAY—Dr. Story reported that a study he is conducting at Colorado State shows nitrogen fertilization of forages used as pasture or hay will decrease the nutritional value of the feed. He also questioned whether there is always a greater net return in dollars from beef produced on nitrogen-fertilized forage. He said research at two other universities confirmed Colorado studies showing that animals fed fertilized hay do not make as high gains as those fed unfertilized hay.

"I am not recommending that fertilization practices be discontinued," he emphasized. "When mountain meadow hay yields can be at least doubled—as they have been in Colorado—through nitrogen fertilization, the increased forage yield more than offsets the drop in nutritional value. But ranchers should realize that the nutritional value of fertilized forages is lowered. There is some factor in nitrogen-fertilized hay that depresses bacterial fermentation."

Goal: Find Inhibitor

The goal at Colorado State, Dr. Story added, is to find this inhibitor and to correct it by "proper fertilization," curing or storage practices, or by supplementation, if needed.

"In view of the tremendous increase in the use of nitrogen fertilizer on not only hay and pasture crops, but also on grain crops, we feel this problem may have many implications," he added.

Dr. Story reported results of five experiments comparing fertilized and non-fertilized hays. Cattle fed on non-fertilized hay consistently outgained those fed nitrogen-fertilized hay by .09-.31 of a pound per day. In one 255-day test, cattle fed non-fertilized hay averaged 80 lb. more than those fed the nitrogen hay.

Results of similar tests at the University of Tennessee and the University of Minnesota are in general agreement with the Colorado findings, he noted.

At Colorado State, Dr. Story has conducted hay studies with the artificial rumen. He found greater gas production from non-fertilized hay than from nitrogen hay. Gas production in the artificial rumen indicates bacterial fermentation or digestibility. He also found that the factor which depresses bacterial fermentation is not present in some species of grasses.

CONDITIONED HAY—In discussing the merits of crushed or crimped alfalfa hay, Dr. Story said that more experimental work is needed before definite conclusions can be made in comparing feeding value with that of non-conditioned hay.

He cited two feeding experiments, one involving producing dairy cows and the other beef calves. There was no difference in the dairy cows' milk production or in body weight of wintering beef calves when crushed and uncrushed alfalfa hay were compared, he said.

"The 30-50% reduction in drying time which the conditioning process gives is important in the Midwest and in other areas where rain is a factor," he said. "But although the 75¢@$1 ton cost of conditioning is not excessive, for semi-arid regions of the West, it must be justified primarily on the basis of improved palatability and possible increase in feeding value."

HIGH-MOISTURE CORN—Dr. Story reported also that high-moisture shelled corn and ear corn, if intended for livestock feed, can be stored successfully in a silo. And the ensiled ear corn, either ground or chopped, has proved to be a better feed for fattening cattle than regular ground ear corn. The nutritional advantage seems to be in better utilization, he said.

In a Colorado test, cattle fed ear corn silage required 8-15% less ear corn than did cattle getting regular ear corn. One explanation for the better utilization is that ear corn silage is relatively high in the lactic acid which forms during the ensiling process and which cattle utilize as a source of energy, he said.

FEEDLOT TRENDS—The trend toward larger cattle feedlots, highly systematized and intensively managed, will continue, Dr. Robert C. Kramer, Michigan State University agricultural economist, predicted.

The trend is already well established in the West, where small feedlots account for only a small percentage of all cattle fed. As far back as 1952-53, only 10% of all cattle on feed in the West were in feedlots of less than 100 head capacity, he said.

In the Corn Belt, the farmer-feeder is still dominant but commercial feedlots are springing up, he said. Custom feedlots have also started operating there, as well as in the South, the Southwest and the West.

Although the Corn Belt still ranks first in cattle feeding, it is losing out percentagewise to other areas, Dr. Kramer noted. Twenty years ago the Corn Belt had 80% of cattle on feed; today it has 70%. Western states have picked up those 10 percentage points, the Michigan economist said.

He pointed to these factors as responsible for the trend to bigness:

The large feedlot which is well managed can achieve operating economies difficult for smaller units to match. A higher degree of mechanization and specialization is possible and the larger operators usually can tap credit sources not generally available to smaller feeders.

Pressure by retail food chains, packers and distributors for a steadier, less seasonal supply of slaughter cattle has also its influence. Many of the larger commercial and custom feed yards arose to help meet this demand.

With plentiful meat supplies and no controls, there should be a decrease in food chain cattle-feeding and meat-packing operations, Dr. Kramer predicted. He estimated that from 10-20% of fed cattle slaughtered come from some type of vertically integrated operation. This percentage has remained fairly constant for the past five years, he noted, and includes rancher-integrators as well as food chains and packers.

He said ranchers have increasingly held title to their calves and feeder cattle to have them fattened for slaughter in custom yards. Availability of these yards and the services they provide will encourage this practice, Dr. Kramer said.

Increases in numbers of cattle fed out for ranchers will more than offset a decline in numbers fed out by retailers. With packer-fed numbers increasing slightly, the trend is for slightly more vertical integration in the beef industry, he added.

Dr. Kramer said production efficiency in beef cattle is increasing. But he noted also that, compared with other commodities, progress has been slow, and called for a speed-up in the rate at which the beef industry adopts cost-cutting and output-increasing innovations.

MECHANIZED FEEDLOTS—How far to go in mechanizing a feedlot was termed "a problem each feedlot operator must answer for himself" by Mr. Timm, the Dixon, Cal., feeder. The feeder must weigh the extra investment in capital and interest against higher labor requirements, Mr. Timm said.

Much in the way of mechanization can be accomplished by ingenuity and without the fancy and highly-expensive push-button systems commonly publicized, he maintained.

Mr. Timm also outlined advantages he has found in mixed feeds:

"The more feed is changed from its original form, the more it costs," he declared. "However, mixed feeds will increase the daily intake of animals, increase gains, can be handled mechanically to reduce labor costs and will permit feeders to use 'off-type' feed to reduce costs."

Mr. Timm said his cattle increased their gains .4 lb. per head per day when he shifted from individual feeds to mixing. The increased gain was obtained despite a reduction of about 10% in the proportion of grain, he noted.

SOYBEAN

(Continued from page 6)

uary crush than in the preceding month, as many in the trade had expected, the 33,893,000 bu. figure actually was slightly larger than for December, 1959, although almost 3 million bushels less than in January last year. In view of the fact that there were supposed to have been some complete shutdowns and partial restriction of operations at other plants during late January, the crush total for that month was a surprise in some quarters.

The reduction in the size of the stock of soybeans in processors' hands during January amounted to nearly 12 million bushels, thereby cutting the total down to a little over 89 million bushels, about 5 million under a year ago. However, this figure was no surprise, only corroborating reports of a growing holding tendency on the part of farmers.

With the beans crushed during January a virtual standoff with the December total, naturally the production of both meal and oil was matching up very closely with the December outturn of both products. It was common knowledge that buyers of both meal and oil had been backing away from processor offerings of the product (as evidenced by the downward price trend for both). However, it was not generally believed that the situation was such that meal stocks in crushers' hands would increase as much as 32,000 tons during January and, in the case of crude oil, that there would be a buildup of 30 million pounds during that same month. Compared with a year ago, the crusher inventory of meal was 27 million tons greater and crude oil about 57 million pounds bigger on Jan. 31, 1960.

March Futures Low

As the soybean and soybean products futures approached the first day for posting of intentions to make delivery on open March contracts, March futures on both the raw commodity and its products were selling below the prices in effect on the corresponding date last year when a crop of about 40 million bushels larger was being marketed. March soybeans were about 12¢ bu. lower than a year earlier, March bean oil was about 2¢ lb. lower and March soybean oil meal was off about 75¢ per ton.

During the week ending Feb. 25, all old crop bean futures (March, May and July) hit new low seasonal ground and, in the case of bean oil, all futures, both old and new crop, did the same thing. On meal, no new lows for several months past were reached.

As of now, the price for soybeans from here on would seem to depend on two factors: (1) How long growers will hold out before marketing in volume, and (2) how long processors are going to be forced to contend with current conversion ratios.

MANUAL

(Continued from page 6)

1. Top producers are farrowing about 10½ hogs per litter, weaning 9 and marketing 8½ plus in 134 days. In contrast, average producers today are farrowing 9 pigs, weaning 7 and marketing 6½ pigs in 167 days.

2. Top producers are marketing an extra 2¼ hogs per litter yearly or enough to market nearly 4½ tons of extra pork from every 10 sows.

3. Top producers, with 10 hogs per litter, pocketed $60 as total litter profit. They got 100 lb. of gain for $12 in costs, making a $6 profit per hog on a $15 market. Average producers did about one-sixth that well, earning a total litter profit of $10.50. Their 7 pigs per litter saved, gained at a cost of $14.25 per 100 lb. That made their profit only $1.50 on a 200-lb. hog sold on $15 market.

4. Managerial skills in life cycle production are making the big difference in who gets by and who gets ahead in the hog business. Top producers are averaging 25-50% less pig costs at farrowing; fewer runts and up to 39% heavier pigs at 8 weeks; faster gains with up to 17 days less feeding time to market, and a big saving in feed through improved feed efficiency.

Management and feeding emphasis by leading hog producers on each stage of a pig's development—all the way "from boar to bacon"—make a major difference in hog profits today, concludes the study.

The Pfizer guide spells out, in table form, what a 1% improvement in bigger litters, gains and feed efficiency can do in the way of extra marketable pork for producers.

Copies of the new manual are available through Agricultural Services, Department RG, Chas. Pfizer & Co., Inc., 800 Second Ave., New York 17.

MARKETS

(Continued from page 2)

and snow, but with the days now getting longer, the disagreeable weather soon will be replaced with April showers and gentle spring breezes." After the excessively dreary February weather, this prospect is certainly appealing to everyone in the valley area in any way associated with the feed industry.

Naturally, the glimmer of increased interest in feed purchases, noted last week, has been evaporated by the cold and snowy weather, but area manufacturers remain firmly convinced that "better days are not too far ahead," as one wholesaler expressed it. The present Lenten season is expected to increase the demands for eggs appreciably, and with poultry at area wholesale markets reported in "good demand," feed manufacturers believe that the anticipated warmer spring weather will create revived interest among the many hatchery operators in the Ohio Valley, especially if the markets for baby chicks show definite signs of firmness.

Mountain States

Formula feed dealers say sales volume is starting to pick up a little bit now and probably has reached the low point for the year.

Most of the demand now is for cattle feeds and demand for poultry and turkey feeds is starting.

Cattle feed business improved quite a bit this week, due to the bad weather conditions in this area. However, everything that is being purchased at the present time is for immediate sale.

Pacific Northwest

Formula feed sales continued good throughout Oregon, Washington and Idaho this week. Movement of dairy and cattle feeds was maintained at a dependable level. Increased sales of chick and turkey starter mashes were reported.

Colder temperatures most of the week, along with snows at the close, increased supplemental feeding. But inventory feed ingredient stocks were being utilized and no general improvement in the over-all feedstuffs demand was apparent.

Ingredient prices were slightly mixed at the close. Trading was moderately slow and buying interest was limited to scattered cars for nearby needs of feeders and feed manufacturers.

Coccidiosis Reported In South and East

CHESWOLD, DEL. — Coccidiosis found in flocks of eastern and southeastern states was reported recently to be causing concern among poultry producers. One survey revealed that chronic respiratory disease and coccidiosis were found in 85% of flocks visited on 240 Delmarva farms.

"The whole Delmarva peninsula, and in fact the Atlantic Coast from New York through the southeastern states—North Carolina, South Carolina, Georgia, Mississippi and Tennessee—have reported a coccidiosis flare-up," said Dr. James A. Porter, manager, Merck Cheswold Poultry Research Farm near Dover. In some instances, he said, the incidence was "of epidemic proportions."

Dr. Porter advised growers to take birds showing signs of coccidiosis to their nearest poultry pathology laboratory for an immediate diagnosis, and to "follow recommendations offered there to eliminate the disease problem."

Weather this winter has been cold and damp in many sections of the nation, and this condition has favored a build-up of coccidiosis oocysts in the litter, according to Dr. Porter. "Special attention must be given to management at this time," he added, "to keep litter dry," to clean up wet spots immediately and to thoroughly clean all houses between changes of flocks."

In his statement, Dr. Porter mentioned the use of some of his firm's products, including Nicarbazine, to prevent outbreaks, and other products like "FloxAid" and "S. Q." to check outbreaks of CRD and coccidiosis.

USDA Offers to Buy More Banned Poultry

WASHINGTON—The U.S. Department of Agriculture announced Feb. 26 that it has offered to buy 2,298,142 additional pounds of frozen ready-to-cook poultry which had been treated with diethylstilbestrol. The offers are subject to vendors' acceptance.

USDA is mailing contracts to persons or firms who offered the poultry. Contracts will become valid when they are signed and returned to the poultry division, Agricultural Marketing Service, USDA, Washington 25, D.C.

Prices of the offers ranged from 32¢ to 45¢ lb., and averaged 43.11¢. Factors which account for the wide price range include variation in prices of live poultry, date of processing, processing costs, weights, quality, services performed and storage costs.

The amount of stilbestrol-treated poultry which USDA has offered to buy now totals approximately 11,006,500 lb. at an average price of 43.46¢ lb. The purchases are being made in accordance with the purchase program which USDA announced Dec. 11, 1959.

Subsequent announcements of offers to purchase will be made, according to USDA officials, as soon as additional documentary evidence is received from persons or firms who complied with the Jan. 31 closing date of the purchasing program.

St. Joseph Feed Club

ST. JOSEPH, MO.—Food and Drug Administration regulations will be the topic of a meeting to be held by the St. Joseph Feed, Seed, Grain & Fertilizer Club, March 17 at 7:30 p.m.

Sam D. Fine, director of the FDA Kansas City district, will be the principal speaker on the topic, "Problems with Agricultural Chemicals." Bob Waite, Dannen Mills, will discuss the feed situation from the manufacturer's standpoint and set the stage for Mr. Fine. Mr. Schmitty, president, who has just returned from Europe, will show some of his trip pictures.

INDEX OF ADVERTISERS

The index of advertisers is provided as a service to readers and advertisers. The publisher does not assume any liability for errors or omissions.

Abbott Laboratories 41-43, 71
Acme Traffic Service .....
Aero Bulk Mfg. .....
Aeroglide Corporation 47
Agri-Tech, Inc. .....
Agricon .....
Allied Chemical Corporation, Nitrogen Division .....
Allied Chemical Corp., Plastics & Coal Chemicals Div. ....
Allied Mills .....
Amburgo Co., Inc. .....
American Cyanamid Co. 30, 31, 69
American Dehydrators Assn... 84
American Elev. & Grain Div.
American Scientific Lab. ....
Anderson Box .....
Anderson, V. D., Co. 45
Arbor Acres Farm 53
Arco Dehydrating Co. .....
Armour & Co. .....
Armstrong, O. B., & Son 20
Aubrey Feed .....

Babcock Poultry Farms .....
Barnard & Leas Mfg. Co., Inc. 32
Baroid Chemicals, Inc., Subsidiary of Natl. Lead Co...
Bartlett, C. O., & Snow Co... 15
Baughman Mfg. Co., Inc. ....
Baxter, A. E., Engineering Co.
Beardstown Mills Co. .....
Beermann Bros. Dehy. .....
Bemis Bro. Bag Co. .....
Berg, Paul .....
Berkshire Chem. .....
Bigelow Sales Co. 91
Bin-Dicator Co. .....
Black, Sivalls & Bryson, Inc...
Blatchford Calf Meal Co. 47
Blomfield-Swanson .....
Bordon Co. 75
Bowman Feed Prod. 48
Bremco Alfalfa 18
Brower Manufacturing Co. ... 72
Brown, Jeff D., & Co. .....
Buckeye Incubator .....
Burlap Council .....
Burrows Equipment Co. 87
Burrus Feed Mills .....
Butler Chemical Co. 23
Butler Mfg. Co. 80

C-K Processing Co. 84
Calcium Carbonate Co. ....
California Pellet Mill Co. .. 54
Caple, A. B. .....
Cardinal Scale Co. .....
Cargill, Inc. .....
Casco Chemical Corp. .....
Central Scientific .....
Central Soya .....
Champion Portable Mill Co...
Chantland Mfg. Co. 84
Chase Bag Co. 18
Checkerboard Grain Co. 40
Chick-Master Incubator Co. ..
CIBA Pharmaceutical Products, Inc. .....
Clinton Corn Processing Co...
Clofine, Herbert K. 19
Clupak, Inc. .....
Colby Milling, Inc. .....
Collier Livestock-Feeder Co... 29
Colonial Poultry Farms .....
Columbia Phosphate Co. 62
Columbia Quarry Co. 16
Columbian Steel Tank Co. ...
Commercial Solvents Corp. 9, 12, 13, 17
Consolidated Blenders, Inc. .. 91
Continental Grain Co. .....
Corn Products Sales Co. ....
Coronet Phosphate Co. .....
Cox, John J. .....
Cudahy Lab. .....
Custom Millers Supply Co. ... 19
Czarnikow Rionda 20

Dabney-Hoover Supply Co., Inc. 64
Daffin Mfg. Co. .....
Dannen Mills, Inc. 79
Darling & Co. .....
Davies, Wm. .....
Davis Enterprises .....
Davis, H. C., Sons' Mfg. Co.
Dawe's Laboratories, Inc. ... 96
Day Company, The .....
Daycom, Inc. .....
Delaware Poultry Laboratories
Devold, Peder, Oil Co. .....
Diamond Alkali Co. .....
Diamond V Mills, Inc. .....
Distillation Products Industries 18, 83
Distillers Feed Research Council .....
Doane Agricultural Service .. 38
Dodgen Indus. .....
Dorn & Mitchell Laboratories. 79
Dorsey Trailers .....
Doty Tech. Labs. .....
Douglas Chemical .....
Dow Chemical .....
Dubuque Twine Co. .....
Duplex Mill & Mfg. Co. 87
Du Pont de Nemours & Co., Inc., E. I. .....

Early & Daniel Co. 68
Eastman Chemical Prod., Inc. 74
Ebersm, J. S., & Sons Mfg. Co., The .....
Elba Corp. of America .....
Erlez Mfg. Co. .....
Eschenheimer, Rudy, Co. ....
Ewing, Ray, Co. 83

Fairfield Eng. .....
Fallek Products .....
Farmacal Industries, Inc. ....
Farm Journal .....
Fehr Bros. Manufactures, Inc.
Ferguson Fumigants .....
Fischbein, Dave .....
Fitzpatrick, U. E., & Co.
Flavor Corp. of America ... 64
Food Mach. & Chem. Corp... 55
Forster Mfg. Co. .....
Fox Co. .....
Fuller Co. .....
Fruen Milling Co. 38

Gaddis Bros. Mfg. .....
Gallicol Corp. .....
Georgia Consolidated Prod. Co. 8
Gerber Sheet Metal .....
Gooch Feed Mills 53
Gorton-Pew Fisheries .....
Grace Chemical Div. 21
Grain Processing Corp. 25
Grand River Chemical Div. of Deere & Co. .....
Gruendler Crusher & Pulverizer Co. .....
Gump, B. F., Co. .....

Hall Distributor Co. .....
Hand, Peter, Foundation 3, 14
Harris Lab. .....
Harris-Crane, Inc. .....
Harshaw Chemical Co. .....
Hayes and Stolz .....
Heil Co., The .....
Heim Mfg. Co. .....
Henderson Mfg. .....
Henke Mfg. Co. .....
Hess & Clark, Inc. 49-52
Heterochemical Corp. 56
Hilltop Lab. .....
Hoffman-Taff, Inc. 15
Hogenson Const. Co. .....
Hogg, N. D., Ltd. .....
Holt Products 58
Honeggers' & Co. 26
Honeymead Products Co. ....
Hooker Chemical .....
Hot Spot Detector, Inc. 28, 29
Howe Scale Co. .....
Howes, S., Co., Inc. .....
Hubbard Milling Co. .....
Hubbell, Charles H. .....
Hygeno Litter .....
Hy-Line Poultry Farm .....

Ibberson, T. E., Co. .....
Illinois Soy Products Co. ....
International Distr. Corp. ....
International Minerals & Chemical Corp. 5
International Paper Co. .....
International Salt Co., Inc. ....
Iowa Limestone Co. .....
Iowa Portable Mill Co. .....
Iowa Soya Co. 84

Jackson, Gilbert, Co., Inc...
Jacobson Machine Works ... 62
Jersey Co. .....
Jones Electric .....

K. & K. Mfg. Co., Inc. ....
Kansas Soya Prod. Co., Inc...
Kees & Company 82
Kellogg, Spencer, & Sons, Inc. 64
Kent, Percy, Bag Co., Inc... 40
Kent Feeds .....
Kem Mfg. Co. .....
Key Alfalfa Dehydrators ....
Kimber Farms .....
Kindstrom-Schmoll Co. .....
Koelsch, Charles J., Grain Co.
Koppers Co., Inc. .....
Kraft Bag Corp. 22
Kraft Foods Co. .....

LaBudde Feed & Grain Co... 84
Landers Mill Mfg. Co. .....
Land O'Lakes Creameries, Inc.
Lauhoff Grain Co. 82
Leach Mfg. Co. .....
LeGear, Dr., Inc. .....
Lennox Industries .....
Larberg Eng. Co. 16
Levens Mfg. Co. .....
Lilly, Eli, & Co. 24, 73
Limestone Products Corp. of America 48
Lonclale Phosphate Co. .....
Longhorn Engineering Co. ..

McCabe Grain Co., Ltd. ....
McMillen Feed Mills .....
Magnus, Mabee & Reynard ..
Maney Bros. Mill & Elev. Co. 92
Mann, W. P., Sales Co. ....
Marine & Animal By-Products Corp. .....
Martin's Hatchery .....
Martin, Theo. W., & Son ...
Master-Bilt Refrigeration Mfg. Co. .....
Mayo Shell Corp. 40
Merck & Co. 77
Meredith Pub. Co. .....
Michigan Chemical Corp. ...
Mid-Continent Grain Co. 89
Mid-States Construction Co...
Midwest Alfalfa Blenders, Inc. 19
Midwest Dried Milk Co. ....
Mill Engineering & Machinery Co. .....
Millbrew Co. .....
Miller High Life Grain Co. .. 78
Miller, Mel, & Co., Inc. ....
Miller Publishing Co., The ...
Minneapolis Sewing Mach. Co.
Minnesota Linseed Oil Co. .. 20
Minute Maid Corp. .....
Monsanto Chem. Co. .....
Morton Salt Co. 11
Mt. Hope Poultry Farm, Inc..
Myers-Sherman Co. .....

Nagel, Herman, Co. 67
Natl. Alfalfa Dehydrating & Mfg. Co. .....
Natl. Distillers Prod. Co. ...
National Molasses Co. 68
National Oats Co. .....
National Renderers Assn. ....
National Vitamin Products ...
Nellis Feed Co. .....
New Bedford Fish Prod. Co..
New Century Co., The .....
New England By-Prod. Corp...
Newsome Comm. Co. .....
Nichols, Incorporated 65
Noatbaar, H. V., & Co. .....
Nopco Chemical Co. .....
North American Mfg. Co. ....
North American Trading & Import Co. .....
North Carolina Granite Corp.. 82
Northern Biochemical Corp. ..
Nor-Vell, Inc. .....
Nutrena Mills, Inc. .....

Oakes Mfg. .....
Olavarria & Co. .....
Olin Mathieson .....
Oyster Shell Corp. 39
Oyster Shell Prod. Co. 20

Pabst Brewing Co. .....
Pannier Bulk Feeder .....
Panogen Co. .....
Paper-Calmenson & Co. 39
Park, Phillip R., Inc. 24
Parks, J. P., Co. 92
Parrish & Heimbecker .....
Parrish, N. K. 76
Paxton Processing Co. 87
Pay Way Feed Mills, Inc. ....
Peavey, F. H., & Co. 87
Peerless Equip. Co., Inc. ...
Penick, S. B., & Co. 19
Perma-Weld .....
Peterson Breeding Farms 32
Pfizer, Chas., & Co., Inc. ...
Phelps-Dodge Refining Corp...
Pilch's Poultry Breeding Farm 46
Pillsbury Co. 44, 45
Pittsburgh Plate Glass Co. ..
Pioss, Joe N., Co. 38
Pope Testing Lab. .....
Prater Pulverizer Co. 87
Productive Acres Mfg. Co. .. 10
Professional Feeds .....
Progressive Farmer .....
Publicker Industries, Inc. 27
Pulverizing Machine .....

Quaker Oats Co. 57

Ralston Purina Co. 63
Rapids Machinery Co. 68
Raymond Bag Corp. .....
Read, Gladwin .....
Red River Alfalfa Co. .....
Reliance Feed Co. .....
Rhinehart Mfg. Co. .....
Richardson Scale Co. .....
Riley Feed Co. .....
Rion Crush Stone Corp. 15
Rocky Mountain Phosphates, Inc. .....
Roskamp Heller Co. .....
Rosner-Hixson Laboratories ..
Ross Machine & Mill Supply.. 60
Ross Mfg. Co. 8
Ryde & Co. .....

St. Regis Paper Co. .....
Salsbury's, Dr., Labs. 33-36
Scanlan, Ivan, & Co. .....
Schenley Distillers, Inc. 16
Schutte Pulverizer Co., Inc...
Screw Conveyor Corp. 55
Seagram, Joseph E., & Sons, Inc. .....
Seco, Inc. 47
Security Mills 60
Seedburo Equipment Co. 82
Shanzer Mfg. .....
Shelby Mfg. .....
Shellbuilder Co. 76
Sievert, C. W. 29
Simonsen Mfg. Co. .....
Small, The W. J., Co. 92
Smith, A. O., Corp. .....
Smith-Douglass Co., Inc. 81
Smith, Edward E., & Co. ....
Sohio Chemical Co. .....
Southwest Mill Supply Co. ..
Specifide, Inc. .....
Spencer Kellogg & Sons, Inc. 64
Sprout, Waldron & Co., Inc. 88, 89
Squibb, E. R. 85
Stabilized Vitamins .....
Staley, A. E., Mfg. Co. .....
Standard Brands, Inc....74, 80, 87
Stearns Magnetic Products ..
Sterner Ind. .....
Sterwin Chemicals Inc. 79
Stone Mountain Grit Co. ....
Strong-Scott Mfg. Co. 67
Successful Farming 89
Sudenga Industries .....
Sunkist Citrus Products Co. ....
Sunset Feed & Grain Co. 67
Superior Boiler Works .....
Superior Feed Co. 64
Superior Separator .....
Suterbilt Corp. .....
Swanson, Carroll, Sales Co...
Synthe Lab. 83

T. D. F. Company .....
Takamine Laboratory .....
Taste Engineering Co. .....
Texas Mill Equipment Co. ..
Thayer Scale Corp. .....
Thompson-Hayward Chem. Co. 18
Ti-Co Industries .....
Timmons & Evans Co. .....
Tobias Enterprises .....
Toledo Scale .....
Toxite Laboratories .....
Trinity Steel Co., Inc. .....
Tyrone Equip. Co. .....
Tyson-Smith Co. .....

Ultra-Life Laboratories, Inc.... 84
Union Bag-Camp Paper Corp.
Union Special Machine Co. 66
U. S. Industrial Chem. Co. ..
Universal Hoist Co. 16
Upjohn Company, The .....

Van Camp Lab. .....
Van Dusen Harrington Co. .. 87
Vantress, Chas., Farms, Inc. ..
Van Waters & Rogers .....
Vineland Poultry Lab. 66
Vita-A-Way, Inc. 78
Vitron Corp. .....
Vy Lactos Laboratories, Inc...

W-W Grinder Corporation ... 84
Wallace & Tiernan Inc. ....
Walsh Mfg. Co. .....
Warren-Douglas Chem. Co. ..
Wells, Ralph, & Co. 72
Wenger Mixer Mfg. Co. 54
Wertz Feed Products .....
Western Condensing Co. 61
Western Yeast Co. 22
West Virginia Pulp & Paper Co. .....
Whitmoyer Laboratories, Inc.. 62
White Shell Corp. .....
Wilbolt Laboratory .....
Wilson & Co. .....
Wilson, R. S., Co. .....
Winona Attrition Mill Co. ....
Wirthmore Feeds .....
Wisconsin Alumni Research Foundation 28
Wise, O. B., Co., Inc. 87
Wyatt Mfg. .....
Wyeth Lab. .....

Young, John F., Co. .....

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